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ABSTRACT

The main purpose of this publication is to provide easy access to the released exercises from the third science assessment conducted by the National Assessment of Educational Progress (NAEP) in 1976-77. This publication focuses on materials for school-age population, and young adults are referenced only on the relevant exercise documentation pages. Exercises and documentation are presented in three parts in loose-leaf format to facilitate sorting and copying. Attitude and experience exercises (part A) are followed by cognitive exercises developed for the 1976-77 assessment (part B), and change exercises from the 1969-70 or 1972-73 assessments of service and the International Assessment exercise (part C). The introduction is divided into five sections. Section one briefly describes NAEP's assessment procedures and documentation. Each of sections two, three, and four presents the rationale, description and organization of the exercises included in parts A, B, and C. Section five contains two types of cross-reference tables. (HM)

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ED161686

THE THIRD ASSESSMENT OF SCIENCE, 1976-77

RELEASED EXERCISE SET

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TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC) AND USERS OF THE ERIC SYSTEM."

by the
National Assessment of Educational Progress

Education Commission of the States
Suite 700, 1860 Lincoln Street
Denver, Colorado 80295

May 1978

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SE 025 001

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U.S. Department of Health, Education, and Welfare
Joseph A. Califano Jr., *Secretary*

Education Division
Mary F. Berry, *Assistant Secretary for Education*

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This report is made pursuant to contract No. OEC-0-74-0506. The amount charged to the Department of Health, Education, and Welfare for the work resulting in this report (inclusive of the amounts so charged for any prior reports submitted under this contract) is $22,730,530. The names of the persons, employed or retained by the contractor, with managerial or professional responsibility for such work, or for the content of the report are as follows: Roy Forbes (see Acknowledgments).

The cost figure cited above represents the total amount of money expended since late 1973 on assessments in art, career and occupational development, reading, writing, social studies/citizenship, science, basic life skills, mathematics and consumerism, resulting, to date, in numerous reports, papers, articles, presentations and assessment materials, many of which are used in state and local assessment programs. A complete list of all such materials is available upon request.

NATIONAL ASSESSMENT OF EDUCATIONAL PROGRESS

Errata Sheet for Released Exercise Set,
The Third Assessment of Science, 1976-77
May 1978

Page 109 This exercise (#RCO9X05) should follow page 106.

Page 192 Exercise # R10102309 (under National P-value) for Scoring Category 17 is zero for both ages and does not appear in the listing.

Page 200 Note should read: "In the 1976-77 adult assessment, only Parts A through C were included."

Page 313 This Scoring Guide was omitted:

SCORING GUIDE
301009-2

13
04 5-29
08 5-34

A. Do you find science topics interesting?

B. If so, what kind of topics?

00 = No response

Acceptable

10 = Other acceptable

Metric system
Weighing stuff
Sociology
Psychology
Experiments

11 = Astronomy

When they're to do with the stars and the moon.
About space, planets, ecology or air.
The solar system, stars, environment.
About the rotation of planets.

12 = Space exploration

About what they have learned about in space and under the sea.

13 = Geology; rocks; earth science; oceanography (except life forms); weather

When studying about rock, living things, how they get their food.
Earth science (some of it), prehistoric times (dinosaurs, etc.).
Evolution of the earth.

14 = Biology; cells; microorganisms; plants; animals

Topics about reptiles.
Study frogs and other kinds of animals.
Life science, earth science, science on the sea (goes with the first one).
Studying animals and doing experiments with chemicals.
Biology, zoology, sometimes earth science, oceanography. Maybe chemistry.

15 = Human body; medicine; disease

Topics on the living body and parts, ocean life, animal life.
Mostly things that have to do with the human body and life itself. Things that have to do with human reproduction and the course of life.

16 = Evolution; archeology; fossils

Prehistoric topics, fossils, rocks.
Topics on prehistoric finds like fossils and bones, and things in ice. Also things having to do with animals of all kinds.
Dinosaurs.

17 = Chemistry; physics; electricity; mechanics

Machines, or simple machines.
Chemicals and animals.
Electrons, electricity, sound, molecules, light.

18 = Science fiction; new discoveries; things in the future

Interesting topics such as science fiction stories or shows.
Topics were you can find interesting information and more modern updated topics which scientists are working on now.

19 = Environment, ecology, pollution

Things that are going on in the world today; such as, overpopulation, pollution and so on.

Unacceptable

20 = Other unacceptable

Tell something of science of the world.
About the way we live.

29 = I don't know.

Page 331 This documentation for this exercise was omitted:

Release #: R502004

NAEP #: 502004-2

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 03-12

National P-value:
R502004 05 15.20

Exercise Total Time (seconds) 48

Source: Comber, L.C. and Keeves, J.P., International Studies in Evaluation I: Science Education in Nineteen Countries. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 357.

FOREWORD

When the U.S. Office of Education was chartered in 1867, one charge to its commissioners was to determine the nation's progress in education. The National Assessment of Educational Progress (NAEP) was initiated a century later to address, in a systematic way, that charge.

Each year since 1969, National Assessment has gathered information about levels of educational achievement across the country and reported its findings to the nation. NAEP surveys the educational attainments of 9-year-olds, 13-year-olds, 17-year-olds and adults (ages 26-35) in 10 learning areas: art, career and occupational development, citizenship, literature, mathematics, music, reading, science, social studies and writing. Different learning areas are assessed every year, and all areas are periodically reassessed in order to measure change in educational achievement. National Assessment has interviewed and tested more than 720,000 young Americans since 1969.

Learning area assessments evolve from a consensus process. Each assessment is the product of several years of work by a great many educators, scholars and lay persons from all over the nation. Initially, these people design objectives for each subject area, proposing general goals they feel Americans should be achieving in the course of their education. After careful reviews, these objectives are given to exercise (item) writers, whose task it is to create measurement tools appropriate to the objectives.

When the exercises have passed extensive reviews by subject-matter specialists, measurement experts and lay persons, they are administered to probability samples. The people who compose those samples are chosen in such a way that the results of their assessment can be generalized to an entire national population. That is, on the basis of the performance of about 2,500 9-year-olds on a given exercise, we can generalize about the probable performance of all 9-year-olds in the nation.

After assessment data have been collected, scored and analyzed, National Assessment publishes reports to disseminate the results as widely as possible. Not all exercises are released for publication. Because NAEP will administer some of the same exercises again in the future to determine whether the performance level of Americans has increased or decreased, it is essential that they not be released in order to preserve the integrity of the study.

ACKNOWLEDGMENTS

Many people have made substantial contributions to the science assessment. Not the least to be gratefully acknowledged are the administrators, teachers and students who cooperated so generously in making the assessment possible, and the National Center for Education Statistics, which funds the National Assessment of Educational Progress (NAEP).

Dozens of consultants -- both subject-matter specialists and lay persons -- reviewed these materials under the general guidance of the National Assessment staff. Administration of exercises was handled by the Research Triangle Institute and the Measurement Research Center (MRC). Scoring and processing were carried out by MRC and by NAEP staff members.

Particular thanks for this exercise set go to Norris Harms (now at the University of Colorado), Jan Pearson and David Wright of the Development, Analysis and Research Department, and James Damon of the Data Processing Department who have had major responsibility for helping to carry out the science assessment. Special thanks are also given to Gwen Edwards and Susan Sullivan of the Data Processing Department and to Fred Daniels, JoAnn Esslinger and Michael Noe of the Development, Analysis and Research Department.

Roy H. Forbes
Director

INTRODUCTION

The main purpose of this released exercise set is to provide easy access to the released exercises from the third science assessment, conducted in 1976-77. Exercises and documentation are in loose-leaf format to facilitate sorting and copying. Unless specific copyright information is included with the exercise documentation, exercises are in the public domain; there are no restrictions on copying or using the exercises or this booklet. Documentation has been kept to a minimum: it includes basic reference numbers, content and objective classifications NAEP has found useful, timing and administration data, and the national percent of correct responses from the 1976-77 assessment for each age group.

Detailed achievement data on group performance or changes in performance from previous assessments are not included in this set; they will be published in later reports. Similarly, detailed documentation of the objectives and development process is not in this set; that is being published concurrently in Science Objectives for the 1976-77 Assessment, available from National Assessment.

Exercises were administered to 9-year-olds, 13-year-olds and 17-year-olds.[1] Some exercises were administered to only one age group, others to two or more age groups. The number of released cognitive and affective exercises for each age group or combination of age groups is shown in Exhibit 1.

The information in the remainder of the Introduction is divided into five sections:

Section 1 briefly describes NAEP's assessment procedures and documentation that is common to the several different types of exercises in the set.

Section 2 describes the rationale and organization of the development of affective and experience questions for the 1976-77 science assessment. This was National Assessment's most extensive effort to measure the affective domain in science. This entire set of exercises has been released and is included as part A of this set.

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[1] A few of the released exercises were also administered to a national sample of young adults, ages 26-35, during the summer of 1977. The focus of this booklet is on materials for school-age populations, and young adults are referenced only on the relevant exercise documentation pages.

EXHIBIT 1. Number of Released Cognitive and Affective Exercises by Age Group or Combination of Age Groups

	Cognitive Exercises			
	Age 9	Age 13	Age 17	Total
Age 9 only	43	--	--	43
Age 13 only	--	30	--	30
Age 17 only	--	--	41	41
Ages 9 and 13	19	19	--	19
Ages 13 and 17	--	43	43	43
Ages 9, 13 and 17	15	15	15	15
TOTAL	77	107	99	191

	Affective Exercises			
	Age 9	Age 13	Age 17	Total
Age 9 only	22	--	--	22
Age 17 only	--	--	4	4
Ages 13 and 17	--	37	37	37
Ages 9, 13 and 17	1	1	1	1
TOTAL	23	38	42	64

Section 3 describes the content and taxonomic classifications used to develop and report cognitive exercises for the 1976-77 science assessment (part B). About one-fifth of these exercises have been released. The remainder have not been released as National Assessment will readminister them in the future to determine whether the performance level of young Americans has increased or declined.

Section 4 presents the classification scheme for released change exercises (part C). These are exercises that were developed for previous science assessments in 1969-70 or 1972-73 and reused in the 1976-77 assessment. About two-thirds of the change exercises have been released. Some exercises from the International Assessment (IEA)[2] are also included in this part.

Section 5 contains two types of cross-reference tables. For users interested in content classifications, there are tables of all the released cognitive exercises that National Assessment has classified into each of the nine science content categories. Those categories are described in Section 3. For users of reports from the first two science assessments, there are cross-reference tables of report numbers for released exercises for the 1969-70, 1972-73 and 1976-77 assessments.

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[2] L.C. Comber and J.P. Keeves, *International Studies in Evaluation I: Science Education in Nineteen Countries* (Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973).

The remainder of the exercise set consists of copies of released exercises and documentation. Attitude and experience exercises are first (part A) followed by cognitive exercises developed for the 1976-77 assessment (part B), change exercises from the 1969-70 or 1972-73 assessments of science and the International Assessment exercises (part C).

Section 1. NAEP Assessment Procedures

All of the exercises in this set were administered to groups of students, using packages containing 30-35 exercises. Exercise packages were accompanied by paced audio tapes. The announcer read the text of each exercise and the response choices. The announcer also told the respondents when to go on to the next exercise. The total administration time for each package including introduction, sample exercise and background questions was about 45 minutes.

Age groups and assessment dates are described below:

Age Group	Birthdates	Assessed During
13-year-olds	January to December 1963	October to December 1976
9-year-olds	January to December 1967	January to February 1977
17-year-olds	October 1959 to September 1960	March to May 1977

Each package of exercises was administered to a national sample of about 2,500 students; no student took more than one package. Most of the exercises were multiple choice with a machine scorable oval to the left of each response choice. Some exercises required the respondent to draw a diagram, graph data or write a short answer. The scoring guides used to categorize responses for these exercises are included.

Each exercise is reproduced as it was seen by the respondent, that is, one exercise per page. It is accompanied by a documentation page containing information about the administration of the exercise. Documentation for the entire set is described below. Documentation that is unique to each exercise subset (parts A, B, C) is described in Sections 2, 3 and 4. A sample exercise and documentation page is also included at the front of each part.

Release Number

The 1976-77 release number is a seven-character number that begins with the letter R and uniquely identifies each exercise. There are three series of release numbers:

RC01E01-RC09X05	1976-77 affective and experience scales (part A and Section 2)
RC10C04-RC91C13	1976-77 cognitive exercises (part B and Section 3)
R101022-R502004	Change exercises from the 1969-70 and 1972-73 science assessments and exercises from the International Assessment (part C and Section 4)

Occasionally, a release number will have an asterisk at the end. The asterisk is used to indicate that the release number and NAEP number (defined below) are not identical for one of two reasons. In some cases, the primary content classification has been changed. More frequently, an exercise has several parts at one age and fewer parts at another age. For internal documentation purposes, the two ages are given separate NAEP numbers but they have been combined under a common release number.

NAEP Number

In most cases, the NAEP number and the release number for an exercise are identical, except that the release number has an R as the first character. The NAEP number is a unique number assigned to each exercise for documentation and reference purposes. NAEP numbers also have other numbers attached to them that may be helpful to the reader. The extra numbers are best explained by example.

The first attitude exercise has the release number RC01E01.

The full NAEP number associated with this exercise is 8-C01E01-818-123,

where

"8" indicates this is a science exercise (as are all the exercises in this booklet).

"818" is an assessment indicator.

The assessment indicators in this booklet are:

818 = Year 08 (1976-77) exercise used for the first time in Year 08.

428 = Year 04 (1972-73) exercise used for the second time in Year 08.

138 = Year 01 (1969-70) exercise used for the third time in Year 08.

128 = Year 01 (1969-70) exercise used for the second time in Year 08.

I18 = International Assessment exercise used for the first time (by NAEP) in Year 08.

"123" is an age-overlap indicator.

The age-overlap indicator shows what age groups responded to the exercise in 1976-77. Possible values are:

1 = Age 9

2 = Age 13

3 = Age 17

4 = Young adults, ages 26-35

Classifications, Taxonomies and Objectives

The 1976-77 affective and experience exercises are classified into nine major groupings presented in Section 2. All cognitive exercises have been assigned to one or more content categories and a single taxonomic level. These two classification systems were used to guide development of the 1976-77 cognitive exercises. They are defined in Section 3. All change exercises from the first two science assessments have been classified by the 1972-73 objectives matrix presented in Section 4.

Package and Exercise Number

Exercises were assembled into packages for administration. For each age group, the 1976-77 package and exercise number is shown. For example, the number "6-27" means package 6, exercise 27. There is not, in general, any correspondence between package numbers at various ages. For example, package 6 at age 13 may contain many of the same exercises as package 8 at age 17.

National P-Value

The national p-value, in general, estimates what percent of students in the nation could perform the exercise correctly in 1976-77. For most exercises, a national percent correct is reported for each relevant age. For some exercises -- in which a single correct answer was difficult to define -- more information is given.

Following the label "National P-Value" is at least one line for every exercise part. The line contains a result number (release number plus a suffix for multipart exercises), a key to show which response choice (in general, the correct answer) is being reported and a p-value for each age group (9, 13, 17) exposed to the exercise. The key has the following values:

00 = No response

01 = First response choice

02 = Second response choice
↓
09 = I don't know response

What national p-values are reported varies with the type of exercise. For the attitude and experience scales (RC01E01-RC09X05 and R301009), national p-values are given for all responses. Cognitive, multiple-choice exercises report the estimated national percentage of each age group choosing the correct response choice. Cognitive, open-ended exercises that require a single, short answer, drawing or graph report the estimated percentage of an age group who gave any acceptable response (scoring categories 10-19). Three exercises required multiple answers, such as listing the materials that make up a pencil (R101028). For those exercises, a national p-value is listed for each scoring category. It represents the percentage who had at least one response assigned to that scoring category. The result number prefixes are 01, 02, ... where 01 denotes no response to the entire exercise, 02 denotes the first scoring category, 03 the second scoring category, etc.

Exercise Time

As explained earlier, exercises were presented in packages along with paced audio tapes. For each age group, the total time (in seconds) is shown for the 1976-77 assessment. The total time is the time allowed to read the exercise and give respondents an opportunity to respond. Actual tapescripts, showing exactly what was read and how the time was broken down for reading and responding, are available from National Assessment. Timings of change exercises are identical across assessments unless otherwise noted on the documentation page.

Scorer Agreement

Open-ended exercises were scored by a staff of specially trained scorers who read the responses and coded them for optical scanning. To help maintain quality control and identify problems, 10% of each scorer's work was independently scored by a second scorer. Records were later merged and tallied for agreement. Scorer agreement shows the percentage of total agreement between scorers on about 260 papers per age group. This figure represents how reliably a small group of highly trained scorers can score the same group of papers at one point in time.

Scoring Guides

Open-ended exercises were coded by specially trained scorers. To help assure consistent scoring, National Assessment developed detailed scoring guides for those exercises. Generally, the scoring guide defines acceptable v. unacceptable responses with illustrative examples. The acceptable and unacceptable categories are usually further subdivided into finer categories to describe common responses or types of responses that are of substantive interest.

In most cases, a two-digit classification system is used for coding each response:

00 = No response

10-19 = Categories of acceptable responses

20-29 = Categories of unacceptable responses

39 = I don't know response

There were two exceptions to this rule in the science assessment:

> Exercise RC01E01 asked the respondent to name his or her favorite class. Responses were categorized into 15 descriptive categories (e.g., art, music, science) without defining acceptable or unacceptable categories.
>
> Exercise R204015 required the respondent to perform a complex graphing task. Instead of a single, overall score, the graph was broken into several elements (e.g., labels, accuracy in plotting), and each element was scored separately.

Most of the open-ended exercises were change exercises from the 1972-73 assessment. To assure scoring consistency, responses from both assessments were scored simultaneously in 1976-77.

Section 2. Affective and Experiential Science Exercises From the 1976-77 Science Assessment (Part A of the Released Exercises)

Attitudes and Values in Science

Many science educators consider attitudes and values to be among the most important education priorities. However, in many cases, it is inappropriate to make objective statements about how people should feel or think. Therefore, the affective components of the assessment were designed to be primarily descriptive -- to find out what attitudes and values are held, and ultimately, the direction of attitudinal change over time.

Because the affective exercises are not categorized into objectives, their format is somewhat different from that of the cognitive section. The affective assessment is comprised of eight logically organized groups of exercises. Each of these groups measures closely related attitudes considered important by science educators. The eight groupings include:

1. Attitudes toward science classes.
2. Vocational and education intentions regarding science and technology.
3. Personal involvement in science-technology related societal problems.

4. Personal use of the tools and attributes of science and technology.

5. Confidence in science.

6. Support of research.

7. Opinions on controversial issues involving science and technology.

8. Awareness of the methods, assumptions and values of science.

The eight exercise groups are discussed below.

1. Attitudes toward science classes. Attitudes assessed in these exercises are all related to classroom experiences. Does the student perceive science class(es) to be enjoyable and useful? Does the student believe teachers enjoy science and make it interesting? Because of the increased emphasis on individualized activities in science curricula, the student's perception of individualization in science class(es) is assessed. Checklist items have been included to assess the extent of extracurricular science activities that students pursue. These items indicate whether or not students value science as an intellectual activity.

2. Vocational and education intentions. These exercises are related to the students' attitudes and intentions regarding further study of science and the possibility of entering a career in a science-related field. Student attitudes toward these areas will affect future manpower pools in science and engineering. Scientific literacy in the country will be affected by the extent to which formal science education is pursued by secondary and postsecondary students. The items in this section assess attitudes toward vocational and education careers and activities related to science.

3. Personal involvement in science. The intent of these exercises is to ascertain if the students believe societal-related science problems affect them personally or if students believe they can change societal conditions. For example, some questions are designed to see if students believe that current problems of energy, food production and overpopulation touch their lives. Students are asked if they believe they personally can make a contribution to the solution of a problem such as the energy shortage. Other items deal with whether or not students are willing to actively help solve problems.

4. Tools -- attributes. These exercises assess students' opinions about the utility of the skills, procedures and philosophy of scientific investigation in their daily life. This includes beliefs that what is learned in science classes in school is applicable to nonschool activities.

5. Confidence in science. These exercises are concerned with the students' belief that science is a beneficial activity. Do the students

believe science can help solve world problems: Has science improved the quality of life: Exercises are included to elicit the students' opinion of the degree to which social institutions such as government should control science and scientific activities. These attitudes may be important in determining the role of scientific research in societal problems.

6. Support of research. In these exercises, students are asked to express attitudes toward the conduct and support of research in basic and applied fields. Attitudes toward such research may influence the direction research takes in the next few decades.

7. Controversial issues. A major theme in these items is student opinions and attitudes about important, potentially hazardous research topics. Students are asked if they believe research should continue in certain areas that have trade offs between potential pay off and risk. Though no "right" answer exists, it is important to determine student opinions and shifts in opinion regarding these critical areas. A scientifically literate population should be able to make the choices concerning such research and know the potential risks and gains in new research.

8. Awareness. These exercises determine whether or not students are aware of the assumptions, values and processes of science. "Awareness" attitudes such as these tend to have a strong cognitive component. At the most basic level, this instrument measures whether or not the students are aware that the process of science exists. The items assess whether students are aware of

   -- Tentativeness of scientific theories
   -- Multiple solutions to problems
   -- Usefulness of incomplete theories
   -- Scientists' self-criticism of research
   -- The empirical nature of science

Experiences in Science

A ninth set of questions was also developed to measure student experiences in science-related activities. One of the basic objectives of science education is to provide concrete experiences with the natural world. Data from these exercises will reflect the extent to which science education is meeting that goal.

Release numbers and the number of exercises of each kind per age are summarized in Exhibit 2.

EXHIBIT 2. Release Numbers and Numbers of Exercises Per Age Group by Attitude and Experience Scale

Scale	Release Number	Number of Exercises by Age		
		Age 9	Age 13	Age 17
1. Attitudes toward science classes	RC01E01-RC01U03	6	8	8
2. Vocational and education intentions	RC02A01-RC02A08	1	4	4
3. Personal involvement	RC03A01-RC03A07	3	4	4
4. Personal use of tools and attributes	RC04A01-RC04A08	1	7	7
5. Confidence in science	RC05A01-RC05A02	--	2	2
6. Support of research	RC06A01-RC06B01	--	2	2
7. Controversial issues	RC07A01-RC07A02	--	2	2
8. Awareness of methods, assumptions and values in science	RC08A01-RC08A03	--	3	3
9. Experiences in science	RC09D01-RC09X05	12	5	5

Section 3. Cognitive Exercises From the 1976-77 Science Assessment[3] (Part B of the Released Exercises)

Early in the development of materials for the third assessment of science in 1976-77, a development matrix was adopted to guide further work. One dimension of the matrix is a condensed and simplified version of Bloom's Taxonomy of Educational Objectives, Cognitive Domain.[4] The categories used are:

1. Knowledge -- Knowledge involves the recall of specifics and universals; the recall of methods and processes; or the recall of a pattern, structure or setting.

2. Comprehension -- Comprehension represents the lowest level of understanding. It refers to a type of understanding or comprehension such that the individual knows what is being communicated and can make use of the material or idea being communicated without necessarily relating it to other material or seeing its fullest implications.

3. Application -- Application involves the use of abstractions in particular and concrete situations. The abstractions may be in the form of general ideas, rules of procedures or generalized methods. The abstractions may also be technical principles, ideas and theories that must be remembered and applied.

4. Analysis, synthesis and evaluation -- Analysis is the breakdown of information into its constituent elements or parts so that the relative hierarchy of ideas is made clear and/or the relations between the ideas expressed are made explicit. Synthesis is the putting together of elements and parts so as to form a whole. Evaluation involves judgments about the value of material and methods for given purposes.

The other dimension of the matrix divides the domain of science into three major areas: (1) content, the body of knowledge in science; (2) the process by which that body of knowledge comes about; and (3) science and society -- the implications of that body of knowledge for mankind. These major areas are further subdivided as shown on the left margin of Exhibit 3.

The matrix in Exhibit 3 shows the number of released exercises, both new and change, in each combination of taxonomic level and content category. Exercises were assigned to a single taxonomic level but were often assigned to

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[3] A more detailed treatment of the objectives and development process for the 1976-77 science assessment is given in Science Objectives for the 1976-77 Assessment, available soon from National Assessment. It includes a summary of objectives from the first two science assessments.

[4] Benjamin Bloom, ed., Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook I, Cognitive Domain (New York: David McKay Co., Inc., 1972).

EXHIBIT 3. Cognitive Development Matrix for the 1976-77 Assessment With Number of Released Exercises Per Age in Each Cell

		Taxonomic Levels				
	Age	Knowledge	Comprehension	Application	Analysis Synthesis and Evaluation	Totals
Content						
Biology	9	3	12	3	0	18
	13	8	12	3	1	24
	17	7	6	6	1	20
Physical science	9	2	17	6	0	25
	13	2	15	14	0	31
	17	3	16	10	0	29
Earth science	9	4	9	2	0	15
	13	3	12	1	3	19
	17	0	11	1	3	15
Integrated topics	9	0	0	1	0	1
	13	0	2	0	0	2
	17	0	3	0	0	3
Processes						
Process methods	9	0	8	5	4	17
	13	0	9	6	4	19
	17	0	6	7	4	17
Decision making	9	0	0	0	0	0
	13	0	0	2	0	2
	17	0	0	4	1	5
Science and Society						
Persistent societal problems	9	0	1	3	0	4
	13	1	5	4	0	10
	17	1	6	4	0	11
Science and self	9	1	4	0	0	5
	13	2	3	0	0	5
	17	2	3	0	1	6
Applied science and technology	9	0	0	0	0	0
	13	0	2	0	0	2
	17	0	4	0	0	4

EXHIBIT 4. Content Subcategories Used to Develop the 1976-77 Cognitive Exercises

Biology

10 = Germ theory and disease
11 = Systematics
12 = Cell theory
13 = Energy transformation
14 = Heredity
15 = Systems
16 = Evolution
17 = Ecology
18 = Behavior
19 = Growth and development

Physical Science

21 = Matter
22 = Combinations
23 = Mechanics
24 = Waves
25 = Electricity and magnetism

Earth Science

31 = Meteorology
32 = Geology
33 = Oceanography
34 = Astronomy

Integrated Topics

41 = Models
42 = Equilibrium
43 = Change
44 = Evolution
45 = Growth
46 = Time/Space
47 = Systems
48 = Cycles
49 = Probability

Process -- Methods

51 = Models
52 = Assumptions
53 = Communications
54 = Measurements
55 = Classification
56 = Observing
57 = Experimenting
58 = Interpretation of data

Persistent Societal Problems

61 = Health and safety
62 = Environment
63 = Growth and resource management

Science and Self

71 = Whole category

Science and Technology (Applied Science)

81 = Biological
82 = Physical

Decision Making

91 = Whole category

multiple content areas. (For example, a number of exercises fit well into both the biology and societal problems categories.) For users who are interested in measuring a particular content area, Exhibit 6 in Section 5 lists the release numbers of all exercises that have been classified under each of the content areas (rows) in the matrix.

In preparing specifications for exercise writing and development, the nine content categories were further divided into subcategories. Earth science, for example, was divided into meteorology, geology, oceanography and astronomy. The detailed subcategories are listed in Exhibit 4. The subcategory for which each exercise was written is coded in the third and fourth character of the 1976-77 release numbers. Other useful information is also encoded. For example, the release number of the first released cognitive exercise is RC11C04, where

RC11C04	R means that the exercise is released.
RC11C04	C means that this is a third assessment exercise.
RC11C04	11 identifies the first content subcategory: biology-systematics (see Exhibit 4).
RC11C04	C means that this is a 1976-77 cognitive exercise.
RC11C04	04 uniquely identifies this exercise within the biology-systematics exercises.

Section 4. Released Change Exercises

The 1976-77 science assessment included exercises from the 1969-70 and 1972-73 science assessments. These exercises were included to measure changes in performance from the earlier assessments. Both sets were classified by the 1972-73 objectives. An outline of the 1972-73 objectives and their relationship to release numbers for change exercises is given in Exhibit 5. Detailed treatment of these objectives can be found in Science Objectives for 1972-73 Assessment, available from NAEP. Somewhat briefer treatment is incorporated into Science Objectives for the 1976-77 Assessment, also available from NAEP.

The cognitive change exercises have also been reclassified into the 1976-77 content and taxonomic categories. These categories, as well as the 1972-73 objective classifications, are shown on the documentation pages that accompany the exercises.

Some of the change exercises were released and printed in prior science assessment reports. Section 5 contains cross-reference lists of the 1976-77, 1972-73 and 1969-70 release numbers for change exercises. The exhibits are ordered by 1976-77, 1972-73 and 1969-70 release numbers, respectively. Exercises with 1972-73 release numbers beginning with an "R" have been printed in the 1972-73 Released Exercise Booklet and Changes in Science Performance, 1969-73: Exercise Volume, Appendix, Report 04-S-20; exercises with 1969-70 release numbers between R101 and R399 are reproduced in Science: National

Results, Report 1. A few exercises from the International Assessment were included in the 1976-77 science assessment. They have release numbers between R501001 and R502004.

Section 5. Cross-Reference Tables

This section includes two sets of cross-reference tables. The first set of tables (Exhibit 6) lists all of the released exercises that National Assessment science consultants have classified into each of the nine science content categories defined in Section 3. Detailed content classifications are included on the exercise documentation pages, but it is not always easy to find the exercises for a particular content category. For example, 13 released exercises in the biology category have biology release numbers (RC11C04-RC19C08). An additional 29 biology-related exercises can be found in the remaining 1976-77 cognitive exercises, change exercises and International Assessment exercises. Exhibit 6 lists the NAEP number and release number of all 42 biology-related exercises under the heading, 1. Biology. An age-overlap indicator is appended to each NAEP number to show the age groups to which National Assessment administered the exercises in 1976-77. As explained in Section 1, the codes 1, 2, 3 and 4 refer to ages 9, 13 17 and young adults, respectively.

The second set of tables, included in Exhibit 7, is for users of reports from previous science assessments. Those reports contained the text of exercises released after each assessment. For each released change exercise in the 1976-77 assessment, Exhibit 7 lists the NAEP number (with age-overlap indicator), 1976-77 release number and, where relevant, 1972-73 release number and 1969-70 release number. The "R" or "U" at the beginning of each prior-assessment release number indicates the release status after that particular assessment. Part A of Exhibit 7 lists the exercises in 1976-77 release number order, while parts B and C list them in 1972-73 and 1969-70 order, respectively. Note that 1969-70 release numbers were age-specific, so part C is really three slightly overlapping lists, one for each age group.

EXHIBIT 5. 1972-73 Objectives and the Correspondence With 1976-77 Change Release Numbers

Elements of Scientific Literacy: A Two-Dimensional Grid Used in the Organization of the Science Objectives

	Fundamental Aspects of Science				
Objectives	Facts and Simple Concepts	Laws (Principles)	Conceptual Schemes	Inquiry Skills	The Scientific Enterprise
Know	(I A)	(I B)	(I C)	(I D)	(I E)
Understand and apply	(II A)	(II B)	(II C)	(II D)	(II E)
Appreciate	(III A)			(III B)	(III C)

Correspondence With Change Release Numbers

Objective	Release Numbers
IA	R101---
IB	R102---
IC	R103---
ID	R104---
IE	R105--
IIA	R201---
IIB	R202---
IIC	R203---
IID	R204---
IIE	R205---
IIIA	R301---
IIIB	R302---
IIIC	R303---

EXHIBIT 6. NAEP Numbers and Release Numbers of 1976-77 Released Exercises in Nine Content Categories

NAEP No.	Rel. No.	NAEP No.	Rel. No.
	1. Biology		
C11C04-1	RC11C04	101045-2	R101045
C11C08-34	RC11C08	101048-1	R101048
C12C02-23	RC12C02	101049-123	R101049
C13C09-1	RC13C09	101085-1	R101085
C14C01-23	RC14C01	101088-1	R101088
C15C06-3	RC15C06	101103-2	R101103
C19C12-1	RC15C08*	101107-2	R101107
C16C01-12	RC16C01	101109-24	R101109
C16C03-23	RC16C03	101113-2	R101113
C17C02-123	RC17C02	101125-24	R101125
C17C07-1	RC17C07	101132-3	R101132
C18C02-23	RC18C02	101140-3	R101140
C19C08-1	RC19C08	101141-34	R101141
C33C01-234	RC33C01	102013-12	R102013
C81C07-3	RC81C07	102017-1	R102017
101022-12	R101022	201071-2	R201071
101023-23	R101023	202048-1	R202048
101030-123	R101030	202050-3	R202050
101038-23	R101038	202085-3	R202085
101042-23	R101042	501002-12	R501002
101044-23	R101044	502001-12	R502001
	2. Physical Science		
C21C01-23	RC21C01	C31C07-1	RC31C07
C21C02-2	RC21C02	101024-1	R101024
C21C11-1	RC21C11	101055-12	R101055
C21C14-3	RC21C14	101058-23	R101058
C23C16-1	RC21C19*	101076-1	R101076
C22C03-23	RC22C03	101077-1	R101077
C22C08-1	RC22C08	101080-1	R101080
C22C11-3	RC22C11	101110-2	R101110
C23C03-23	RC23C03	101124-2	R101124
C23C09-2	RC23C09	101129-2	R101129
C23C23-1	RC23C23	101146-3	R101146
C23C32-3	RC23C32	101150-3	R101150
C23C33-3	RC23C33	101218-12	R101218
C24C02-23	RC24C02	101220-2	R101220
C24C06-1	RC24C06	102020-3	R102020
C25C01-12	RC25C01	102025-3	R102025
C25C03-23	RC25C03	201056-1	R201056
C25C12-1	RC25C12	201057-1	R201057
C25C16-3	RC25C16	201060-1	R201060

EXHIBIT 6 *(Cont.)*. NAEP Numbers and Release Numbers of 1976-77 Released Exercises in Nine Content Categories

NAEP No.	Rel. No.	NAEP No.	Rel. No.
2. Physical Science *(Cont.)*			
201067-123	R201067	202086-3	R202086
201073-234	R201073	202088-3	R202088
201077-3	R201077	202095-2	R202095
201079-34	R201079	202106-12	R202106
201086-2	R201086	203020-123	R203020
201114-2	R201114	204092-2	R204092
202029-123	R202029	204140-1	R204140
202031-123	R202031	501003-2	R501003
202057-3	R202057	502002-23	R502002
202058-123	R202058	502003-23	R502003
202060-3	R202060	502004-2	R502004
202070-12	R202070		
3. Earth Science			
C31C01-23	RC31C01	101129-2	R101129
C31C07-1	RC31C07	102014-123	R102014
C32C04-23	RC32C04	102019-12	R102019
C32C11-3	RC32C11	102021-2	R102021
C33C01-234	RC33C01	102024-3	R102024
C34C04-23	RC34C04	201015-23	R201015
C34C06-123	RC34C06	201052-234	R201052
C34C10-1	RC34C10	201058-1	R201058
C44C01-23	RC44C01	201060-1	R201060
C82C12-3	RC82C12	201062-1	R201062
101062-12	R101062	201074-234	R201074
101069-12	R101069	202037-3	R202037
101082-12	R101082	202055-234	R202055
101097-12	R101097	204072-1	R204072
101100-1	R101100	501001-12	R501001
4. Integrated Topics			
C44C01-23	RC44C01	C43C02-3	RC47C02*
C46C01-23	RC46C01	102017-1	R102017

EXHIBIT 6 *(Cont.)*. NAEP Numbers and Release Numbers of 1976-77
Released Exercises in Nine Content Categories

5. Process - Methods

NAEP No.	Rel. No.	NAEP No.	Rel. No.
C31C01-23	RC31C01	202081-1	R202081
C53C01-23	RC53C01	203018-3	R203018
C54C01-2	RC54C01	204038-123	R204038
C54C04-23	RC54C04	204061-123	R204061
C54C07-23	RC54C07	204064-1	R204064
C54C12-1	RC54C12	204070-3	R204070
C55C04-1	RC55C04	204079-1	R204079
C56C03-123	RC56C03	204080-1	R204080
C56C04-1	RC56C04	204088-1	R204088
C56C06-3	RC56C06	204094-2	R204094
C57C02-23	RC57C02	204097-2	R204097
C58C05-23	RC58C05	204098-2	R204098
C58C09-1	RC58C09	204100-2	R204100
C58C19-3	RC58C19	204102-3	R204102
101028-1	R101028	204103-3	R204103
104014-12	R104014	204128-1	R204128
105011-24	R105011	204137-12	R204137
201082-3	R201082	205020-2	R205020
202071-12	R202071	205023-3	R205023

6. Decision Making

C17C07-1	RC17C07	C63C05-23	RC63C05
C33C01-234	RC33C01	C63C09-2	RC63C09
C61C05-23	RC61C05	C63C10-234	RC63C10
C61C07-23	RC61C07	C63C16-3	RC63C16
C61C10-1	RC61C10	C91C02-23	RC91C02
C62C01-2	RC62C01	C91C06-23	RC91C06
C62C04-23	RC62C04	201021-1234	R201021
C62C13-3	RC62C13	303033-3	R303033

7. Persistent Societal Problems

C22C03-23	RC22C03	C71C04-123	RC71C04
C24C06-1	RC24C06	101030-123	R101030
C25C12-1	RC25C12	101048-1	R101048
C62C13-3	RC62C13	101103-2	R101103
C71C02-23	RC71C02	302007-3	R302007

EXHIBIT 6 *(Cont.)*. NAEP Numbers and Release Numbers of 1976-77 Released Exercises in Nine Content Categories

NAEP No.	Rel. No.	NAEP No.	Rel. No.
	8. Science and Self		
C81C07-3	RC81C07	C82C12-3	RC82C12
C82C04-234	RC82C04	205010-23	R205010
	9. Applied Science and Technology		
C91C02-23	RC91C02	302007-3	R302007
C91C06-23	RC91C06	303033-3	R303033
C91C13-3	RC91C13		

EXHIBIT 7A. Cross-Reference Tables for Released Change Exercises
Showing NAEP Number and 1976-77, 1972-73 and 1969-70
Release Numbers Ordered by 1976-77 Release Number

NAEP NO	1976-77 REL NO	1972-73 REL NO	1969-70 RELEASE NUMBERS AGE 9	AGE 13	AGE 17
101022-12	R101022	UB104			
101023-23	R101023	UB105			
101024-1	R101024	UP106			
101028-1	R101028	UP107			
101030-123	R101030	UB108			
101038-23	R101038	UB109			
101042-234	R101042	UB112			
101044-23	R101044	UB114			
101045-2	R101045	UB115			
101048-1	R101048	UB116			
101049-123	R101049	UB117			
101055-12	R101055	UP119			
101058-23	R101058	UP120			
101062-12	R101062	UP121			
101069-12	R101069	RP104	U632	U708	
101076-1	R101076	RP110	U616		
101077-1	R101077	RP111	U636		
101080-1	R101080	UP126	U606		
101082-12	R101082	UP127	U633	U709	
101085-1	R101085	RB116	U655		
101088-1	R101088	UB130	U608		
101097-12	R101097	RP122	U624	U703	
101100-1	R101100	RB124	U647		
101103-2	R101103	RB126		U727	
101107-2	R101107	UB138		U724	
101109-24	R101109	RB129		U731	
101110-2	R101110	RP130		U710	
101113-2	R101113	UB140		U722	
101124-2	R101124	RP140		U725	
101125-24	R101125	RB141		U720	
101129-2	R101129	RP144		U717	
101132-3	R101132	UB144			U805
101140-3	R101140	UB145			U803
101141-34	R101141	UB146			U842
101146-3	R101146	RP154			U806
101150-3	R101150	RP157			U823
101218-12	R101218	UP153			
102013-12	R102013	UB155			
102014-123	R102014	UP156			
102017-1	R102017	UB157			
102019-12	R102019	UP159			
102020-3	R102020	UP160			
102021-2	R102021	UP161		U721	

EXHIBIT 7A *(Cont.)*. Cross-Reference Tables for Released Change Exercises
Showing NAEP Number and 1976-77, 1972-73 and 1969-70
Release Numbers Ordered by 1976-77 Release Number

	1976-77	1972-73	1969-70 RELEASE NUMBERS		
NAEP NO	REL NO	REL NO	AGE 9	AGE 13	AGE 17
102024-3	R102024	UP163			U834
102025-3	R102025	UP164			U815
104014-12	R104014	UB169			
105011-24	R105011	UU172		U770	
201015-23	R201015	UP174			
201021-1234	R201021	UB176			
201052-234	R201052	UP185			
201056-1	R201056	RP170	U631		
201057-1	R201057	UP187	U656		
201058-1	R201058	UP188	U644		
201060-1	R201060	UP190	U65[illegible]		
201062-1	R201062	UP191	U649		
201067-123	R201067	RP175	R141		
201071-2	R201071	RB179		U730	
201073-234	R201073	RP181		U746	U830
201074-234	R201074	UP193		U744	U827
201077-3	R201077	UP195			U829
201079-34	R201079	RP184			U813
201082-3	R201082	RP186			
201086-2	R201086	RP189		U726	
201114-2	R201114	UP199			
202029-123	R202029	UP203			
202031-123	R202031	UP204			
202037-3	R202037	UP205			
202048-1	R202048	UB207			
202050-3	R202050	UB209			
202055-234	R202055	UP210			
202057-3	R202057	UP211			
202058-123	R202058	UP212			
202060-3	R202060	UP213			
202070-12	R202070	UP217			
202071-12	R202071	UU218			
202081-1	R202081	RP193	U626		
202085-3	R202085	RB196			U824
202086-3	R202086	UP224			U833
202088-3	R202088	RP198			U811
202095-2	R202095	UP225		U752	
202106-12	R202106	RP206	R135		
203018-3	R203018	UU231			
203020-123	R203020	UP232			
204015-23	R204015	UB238			
204038-123	R204038	UB243			
204061-123	R204061	UP247			

EXHIBIT 7A *(Cont.)*. Cross-Reference Tables for Released Change Exercises Showing NAEP Number and 1976-77, 1972-73 and 1969-70 Release Numbers Ordered by 1976-77 Release Number

	1976-77	1972-73	1969-70 RELEASE NUMBERS		
NAEP NO	REL NO	REL NO	AGE 9	AGE 13	AGE 17
204064-1	R204064	UU249			
204070-3	R204070	UP250			
204072-1	R204072	UP252	U630		
204079-1	R204079	UB254	U662		
204080-1	R204080	UP255	U670		
204088-1	R204088	RB219	R151		
204092-2	R204092	RP223		U757	
204094-2	R204094	UB258		U749	
204097-2	R204097	RU226		U759	
204098-2	R204098	UP259		U748	
204100-2	R204100	RP227		U754	
204102-3	R204102	RU228			U858
204103-3	R204103	RU229			U855
204128-1	R204128	RB235	R148		
204137-12	R204137	RB236	R133		
205010-23	R205010	UP263			
205020-2	R205020	UU266		U767	
205023-3	R205023	UU268			U866
301009-2	R301009	RU268		U780	
302007-3	R302007	UU271			
303033-3	R303033	RB272			
303042-3	R303042	RU273			
303065-3	R303065	RU274			
303070-3	R303070	RU276			
303083-3	R303083	UB287			
303088-1	R303088	UU290	U683		

EXHIBIT 7B. Cross-Reference Tables for Released Change Exercises Showing NAEP Number and 1976-77, 1972-73 and 1969-70 Release Numbers Ordered by 1972-73 Release Number

NAEP NO	1976-77 REL NO	1972-73 REL NO	1969-70 RELEASE NUMBERS AGE 9	AGE 13	AGE 17
101085-1	R101085	RB116	U655		
101100-1	R101100	RB124	U647		
101103-2	R101103	RB126		U727	
101109-24	R101109	RB129		U731	
101125-24	R101125	RB141		U720	
201071-2	R201071	RB179		U730	
202085-3	R202085	RB196			U824
204088-1	R204088	RB219	R151		
204128-1	R204128	RB235	R148		
204137-12	R204137	RB236	R133		
303033-3	R303033	RB272			
101069-12	R101069	RP104	U632	U708	
101076-1	R101076	RP110	U616		
101077-1	R101077	RP111	U636		
101097-12	R101097	RP122	U624	U703	
101110-2	R101110	RP130		U710	
101124-2	R101124	RP140		U725	
101129-2	R101129	RP144		U717	
101146-3	R101146	RP154			U806
101150-3	R101150	RP157			U823
201056-1	R201056	RP170	U631		
201067-123	R201067	RP175	R141		
201073-234	R201073	RP181		U746	U830
201079-34	R201079	RP184			U813
201082-3	R201082	RP186			
201086-2	R201086	RP189		U726	
202081-1	R202081	RP193	U626		
202088-3	R202088	RP198			U811
202106-12	R202106	RP206	R135		
204092-2	R204092	RP223		U757	
204100-2	R204100	RP227		U754	
204097-2	R204097	RU226		U759	
204102-3	R204102	RU228			U856
204103-3	R204103	RU229			U855
301009-2	R301009	RU268		U780	
303042-3	R303042	RU273			
303065-3	R303065	RU274			
303070-3	R303070	RU276			
101022-12	R101022	UB104			
101023-23	R101023	UB105			
101030-123	R101030	UB108			
101038-23	R101038	UB109			
101042-234	R101042	UB112			
101044-23	R101044	UB114			

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EXHIBIT 7B *(Cont.)*. Cross-Reference Tables for Released Change Exercises
Showing NAEP Number and 1976-77, 1972-73 and 1969-70
Release Numbers Ordered by 1972-73 Release Number

	1976-77	1972-73	1969-70 RELEASE NUMBERS		
NAEP NO	REL NO	REL NO	AGE 9	AGE 13	AGE 17
101045-2	R101045	UB115			
101048-1	R101048	UB116			
101049-123	R101049	UB117			
101088-1	R101088	UB130	U608		
101107-2	R101107	UB138		U724	
101113-2	R101113	UB140		U722	
101132-3	R101132	UB144			U805
101140-3	R101140	UB145			U803
101141-34	R101141	UB146			U842
102013-12	R102013	UB155			
102017-1	R102017	UB157			
104014-12	R104014	UB169			
201021-1234	R201021	UB176			
202048-1	R202048	UB207			
202050-3	R202050	UB209			
204015-23	R204015	UB238			
204038-123	R204038	UB243			
204079-1	R204079	UB254	U662		
204094-2	R204094	UB258		U749	
303083-3	R303083	UB287			
101024-1	R101024	UP106			
101028-1	R101028	UP107			
101055-12	R101055	UP119			
101058-23	R101058	UP120			
101062-12	R101062	UP121			
101080-1	R101080	UP126	U606		
101082-12	R101082	UP127	U633	U709	
101218-12	R101218	UP153			
102014-123	R102014	UP156			
102019-12	R102019	UP159			
102020-3	R102020	UP160			
102021-2	R102021	UP161		U721	
102024-3	R102024	UP163			U834
102025-3	R102025	UP164			U815
201015-23	R201015	UP174			
201052-234	R201052	UP185			
201057-1	R201057	UP187	U656		
201058-1	R201058	UP188	U644		
201060-1	R201060	UP190	U653		
201062-1	R201062	UP191	U649		
201074-234	R201074	UP193		U744	U827
201077-3	R201077	UP195			U829
201114-2	R201114	UP199			

EXHIBIT 7B *(Cont.)*. Cross-Reference Tables for Released Change Exercises Showing NAEP Number and 1976-77, 1972-73 and 1969-70 Release Numbers Ordered by 1972-73 Release Number

NAEP NO	1976-77 REL NO	1972-73 REL NO	1969-70 RELEASE NUMBERS AGE 9	AGE 13	AGE 17
202029-123	R202029	UP203			
202031-123	R202031	UP204			
202037-3	R202037	UP205			
202055-234	R202055	UP210			
202057-3	R202057	UP211			
202058-123	R202058	UP212			
202060-3	R202060	UP213			
202070-12	R202070	UP217			
202086-3	R202086	UP224			U833
202095-2	R202095	UP225		U752	
203020-123	R203020	UP232			
204061-123	R204061	UP247			
204070-3	R204070	UP250			
204072-1	R204072	UP252	U630		
204080-1	R204080	UP255	U670		
204098-2	R204098	UP259		U748	
205010-23	R205010	UP263			
105011-24	R105011	UU172		U770	
202071-12	R202071	UU218			
203018-3	R203018	UU231			
204064-1	R204064	UU249			
205020-2	R205020	UU266		U767	
205023-3	R205023	UU268			U866
302007-3	R302007	UU271			
303088-1	R303088	UU290	U683		

EXHIBIT 7C. Cross-Reference Tables for Released Change Exercises
Showing NAEP Number and 1976-77, 1972-73 and 1969-70
Release Numbers Ordered by 1969-70 Release Numbers

NAEP NO	1976-77 REL NO	1972-73 REL NO	1969-70 RELEASE NUMBERS AGE 9	AGE 13	AGE 17
204137-12	R204137	RB236	R133		
202106-12	R202106	RP206	R135		
201067-123	R201067	RP175	R141		
204128-1	R204128	RB235	R148		
204088-1	R204088	RB219	R151		
101080-1	R101080	UP126	U606		
101088-1	R101088	UB130	U608		
101076-1	R101076	RP110	U616		
101097-12	R101097	RP122	U624	U703	
202081-1	R202081	RP193	U626		
204072-1	R204072	UP252	U630		
201056-1	R201056	RP170	U631		
101069-12	R101069	RP104	U632	U708	
101082-12	R101082	UP127	U633	U709	
101077-1	R101077	RP111	U636		
201058-1	R201058	UP188	U644		
101100-1	R101100	RB124	U647		
201062-1	R201062	UP191	U649		
201060-1	R201060	UP190	U653		
101085-1	R101085	RB116	U655		
201057-1	R201057	UP187	U656		
204079-1	R204079	UB254	U662		
204080-1	R204080	UP255	U670		
303088-1	R303088	UU290	U683		

NAEP NO	1976-77 REL NO	1972-73 REL NO	1969-70 RELEASE NUMBERS AGE 9	AGE 13	AGE 17
101097-12	R101097	RP122	U624	U703	
101069-12	R101069	RP104	U632	U708	
101082-12	R101082	UP127	U633	U709	
101110-2	R101110	RP130		U710	
101129-2	R101129	RP144		U717	
101125-24	R101125	RB141		U720	
102021-2	R102021	UP161		U721	
101113-2	R101113	UB140		U722	
101107-2	R101107	UB138		U724	
101124-2	R101124	RP140		U725	
201086-2	R201086	RP189		U726	
101103-2	R101103	RB126		U727	
201071-2	R201071	RB179		U730	
101109-24	R101109	RB129		U731	
201074-234	R201074	UP193		U744	U827
201073-234	R201073	RP181		U746	U830

EXHIBIT 7C *(Cont.)*. Cross-Reference Tables for Released Change Exercises Showing NAEP Number and 1976-77, 1972-73 and 1969-70 Release Numbers Ordered by 1969-70 Release Numbers

NAEP NO	1976-77 REL NO	1972-73 REL NO	1969-70 RELEASE NUMBERS AGE 9	AGE 13	AGE 17
204098-2	R204098	UP259		U748	
204094-2	R204094	UB258		U749	
202095-2	R202095	UP225		U752	
204100-2	R204100	RP227		U754	
204092-2	R204092	RP223		U757	
204097-2	R204097	RU226		U759	
205020-2	R205020	UU266		U767	
105011-24	R105011	UU172		U770	
301009-2	R301009	RU268		U780	
101140-3	R101140	UB145			U803
101132-3	R101132	UB144			U805
101146-3	R101146	RP154			U806
202088-3	R202088	RP198			U811
201079-34	R201079	RP184			U813
102025-3	R102025	UP164			U815
101150-3	R101150	RP157			U823
202085-3	R202085	RB196			U824
201074-234	R201074	UP193		U744	U827
201077-3	R201077	UP195			U829
201073-234	R201073	RP181		U746	U830
202086-3	R202086	UP224			U833
102024-3	R102024	UP163			U834
101141-34	R101141	UB146			U842
204103-3	R204103	RU229			U855
204102-3	R204102	RU228			U853
205023-3	R205023	UU268			U866

PART A

AFFECTIVE AND EXPERIENTIAL EXERCISES FROM THE 1976-77 ASSESSMENT:

Sample Documentation and Exercise

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SAMPLE DOCUMENTATION PAGE

① Release #: RC01E01

② NAEP #: C01E01-123

③ Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

④ Assessed In: 1976-77
⑤ Release Status: Released after 1976-77

		9	13	17
⑥ Overlap:				
⑦ 1976-77 Package-Exercise:		06-01	04-01	04-01
⑧ National P-value:				
ⓐ RC01E01A	ⓑ 00	ⓒ 1.94	.42	.48
RC01E01A	10	24.45	15.08	16.01
RC01E01A	11	2.86	13.26	12.69
RC01E01A	12	6.43	11.37	11.83
RC01E01A	13	.01	1.42	2.22
RC01E01A	14	4.67	12.54	6.39
RC01E01A	15	.47	2.65	4.59
RC01E01A	16	5.97	4.79	6.47
RC01E01A	17		1.98	2.89
RC01E01A	18	.08	3.48	7.04
RC01E01A	19		.47	7.01
RC01E01A	20			.96
RC01E01A	21	47.80	29.72	18.17
RC01E01A	22	.74	1.64	2.12
RC01E01A	23		.01	
RC01E01A	24		.10	.42
RC01E01A	25	2.96	.85	.36
RC01E01A	39	1.62	.22	.34
RC01E01B	00	2.91	.72	.95
RC01E01B	10	43.58	18.20	16.75
RC01E01B	11	3.96	14.01	16.39
RC01E01B	12	7.59	18.09	13.82
RC01E01B	13	.07	2.09	3.56
RC01E01B	14	6.11	10.25	8.51
RC01E01B	15	1.00	3.56	2.75
RC01E01B	16	6.19	4.17	3.97
RC01E01B	17		2.14	2.59
RC01E01B	18		3.29	5.31
RC01E01B	19		.95	7.18
RC01E01B	20	.07		.49
RC01E01B	21	19.85	19.24	13.31
RC01E01B	22	1.01	1.97	2.22
RC01E01B	24		.05	.50
RC01E01B	25	4.94	.58	.69
RC01E01B	39	2.69	.68	1.01
⑨ Exercise Total Time (seconds)		46	45	43
⑩ Percent Scorer Agreement		99	100	99

⑪ Note: 'Second most favorite subject' was sometimes interpreted to be 'least favorite subject.'

SAMPLE EXERCISE

1. For this exercise, write out your answers to questions A and B below.

A. What has been your most favorite subject in school?

____

B. What has been your second most favorite subject in school?

____

EXPLANATION OF EXERCISE DOCUMENTATION

1. 1976-77 Release Number: See Sections 1 and 2 of the Introduction.
2. NAEP Number (C01E01) and Age-Overlap Indicator (-123): NAEP reference number and age groups assessed (1 is age 9, 2 is age 13, 3 is age 17 and 4 is adults).
3. Content Classifications: See Section 2.
4. Assessed In: First assessed in 1976-77.
5. Release Status: Released for public use after the 1976-77 assessment.
6. Overlap: Age groups assessed with this exercise in 1976-77.
7. 1976-77 Package-Exercise: Location of this exercise in assessment packages.
8. National P-Value: One line for each response choice or scoring category of each exercise part. Each line has (a) result number to identify the exercise part, (b) a key to identify the response choice or scoring category and (c) the national percentages of respondents making that choice in 1976-77.
9. Exercise Total Time: Number of seconds allowed on paced audio tape to read and respond to this exercise.
10. Percent Scorer Agreement: Percent of agreement between independent scorings of about 10% of the responses in an age group. See Section 1.
11. Note: Supplementary information about special conditions, exceptions, etc.
12. NAEP number with subject area indicator (8- is science) and assessment indicator (-818). See Section 1.

⑫

Release #: RC01E01

NAEP #: C01E01-123

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

		9	13	17
Overlap:				
1976-77 Package-Exercise:		06-01	04-01	04-01
National P-value:				
RC01E01A	00	1.94	.42	.48
RC01E01A	10	24.45	15.08	16.01
RC01E01A	11	2.86	13.26	12.69
RC01E01A	12	6.43	11.37	11.83
RC01E01A	13	.01	1.42	2.22
RC01E01A	14	4.67	12.54	6.39
RC01E01A	15	.47	2.65	4.59
RC01E01A	16	5.97	4.79	6.47
RC01E01A	17		1.98	2.89
RC01E01A	18	.08	3.48	7.04
RC01E01A	19		.47	7.01
RC01E01A	20			.96
RC01E01A	21	47.80	29.72	18.17
RC01E01A	22	.74	1.64	2.12
RC01E01A	23		.01	
RC01E01A	24		.10	.42
RC01E01A	25	2.96	.85	.36
RC01E01A	39	1.62	.22	.34
RC01E01B	00	2.91	.72	.95
RC01E01B	10	43.58	18.20	16.75
RC01E01B	11	3.96	14.01	16.39
RC01E01B	12	7.59	18.09	13.82
RC01E01B	13	.07	2.09	3.56
RC01E01B	14	6.11	10.25	8.51
RC01E01B	15	1.00	3.56	2.75
RC01E01B	16	6.19	4.17	3.97
RC01E01B	17		2.14	2.59
RC01E01B	18		3.29	5.31
RC01E01B	19		.95	7.18
RC01E01B	20	.07		.49
RC01E01B	21	19.89	19.24	13.31
RC01E01B	22	1.01	1.97	2.22
RC01E01B	24		.05	.50
RC01E01B	25	4.94	.58	.69
RC01E01B	39	2.69	.68	1.01
Exercise Total Time (seconds)		46	45	43
Percent Scorer Agreement		99	100	99

Note: 'Second most favorite subject' was sometimes interpreted to be 'least favorite subject.'

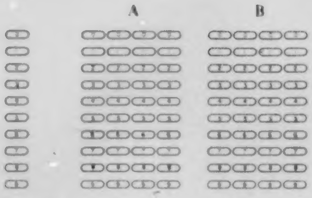
1. For this exercise, write out your answers to questions A and B below.

A. What has been your most favorite subject in school?

____

B. What has been your second most favorite subject in school?

____



STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

SCORING GUIDE
C01E01-123

00 = No response

10 = English and Language Arts

Reading
American Literature
English literature
Composition
Journalism
Speech, debate and communications
Theatre and drama
English or literature club

11 = Social Sciences

Economics
Geography
History
Government
Current events
Psychology
Sociology
Clubs

12 = Natural sciences

Science or general science
Biology
Life sciences
Physical science
Chemistry
Physics
Environmental science, ecology and conservation
Earth sciences
Anthropology
Science clubs

13 = Foreign Languages

Foreign language club

14 = Health and physical education (excluding sports)

Health, family living, child development and first aid

C01E01-123 Cont'd

15 = Music

Music appreciation
Singing, choir or chorus
Band
Orchestra
Music clubs

16 = Art

Painting and drawing
Pottery and ceramics
Crafts
Design
Plastics
Clubs

17 = Home economics

Clothing and textiles
Foods and nutrition
Home economics club

18 = Trades and Industrial Arts

Woods and construction
Drafting and mechanical drawing
Metals and working with metal
Automotive mechanics
DECCA
Trades and industry clubs

19 = Business

Typewriting
Bookkeeping
Shorthand
Business arithmetic or mathematics
Accounting
Business law
Business machines
Business education clubs

20 = Agriculture

Agriculture clubs

C01E01-123 Cont'd

21 = Mathematics

Algebra
Geometry
Trigonometry
Computer science
Math clubs

22 = Other

Sports - team and individual sports
ROTC
Driver's education
Study hall
Religion
Initials (if unable to determine what they stand for)

23 = All; I like them all

24 = None; I don't like any

25 = Other unacceptable

Lunch

39 = I don't know.

Release #: RC01E02

NAEP #: C01E02-23

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 04-02	17 04-02
National P-value:			
RC01E02A	00	.17	.17
RC01E02A	01	4.57	5.27
RC01E02A	02	16.16	25.70
RC01E02A	03	47.71	49.82
RC01E02A	04	24.92	16.28
RC01E02A	05	6.47	2.77
RC01E02B	00	.19	.26
RC01E02B	01	6.77	2.02
RC01E02B	02	33.12	24.48
RC01E02B	03	37.97	46.18
RC01E02B	04	17.36	23.29
RC01E02B	05	4.59	3.78
RC01E02C	00	.16	.17
RC01E02C	01	21.22	13.89
RC01E02C	02	22.62	23.38
RC01E02C	03	26.40	28.65
RC01E02C	04	17.95	22.37
RC01E02C	05	11.65	11.54
RC01E02D	00	.15	.25
RC01E02D	01	5.17	5.93
RC01E02D	02	11.41	12.19
RC01E02D	03	21.13	22.32
RC01E02D	04	24.10	26.46
RC01E02D	05	38.03	32.86
Exercise Total Time (seconds)		46	43

2. Please give your opinion on each of the following questions.

A. How often are science classes boring?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

B. How often are science classes fun?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

C. How often do you like to go to science class?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

D. How often are you afraid to ask questions in science class?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

RC01E02-R18

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC01E03

NAEP #: C01E03-23

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		04-03	04-03
National P-value:			
RC01E03A	00	.38	.24
RC01E03A	01	12.04	7.34
RC01E03A	02	35.50	37.37
RC01E03A	03	37.84	39.44
RC01E03A	04	11.76	13.68
RC01E03A	05	2.48	1.93
RC01E03B	00	.06	.24
RC01E03B	01	1.65	2.03
RC01E03B	02	12.84	20.13
RC01E03B	03	39.57	45.51
RC01E03B	04	36.19	28.21
RC01E03B	05	9.69	3.88
RC01E03C	00	.37	.27
RC01E03C	01	1.98	.39
RC01E03C	02	9.20	5.97
RC01E03C	03	28.97	30.73
RC01E03C	04	37.04	44.10
RC01E03C	05	22.44	18.53
RC01E03D	00	.32	.30
RC01E03D	01	3.52	1.84
RC01E03D	02	15.10	12.75
RC01E03D	03	41.46	48.03
RC01E03D	04	30.46	32.05
RC01E03D	05	9.15	5.03
RC01E03E	00	.31	.23
RC01E03E	01	2.56	1.79
RC01E03E	02	11.31	10.83
RC01E03E	03	35.67	42.49
RC01E03E	04	36.31	38.06
RC01E03E	05	13.84	6.61
RC01E03F	00	.35	.19
RC01E03F	01	14.45	11.76
RC01E03F	02	34.67	43.25
RC01E03F	03	32.75	30.41
RC01E03F	04	14.27	12.13
RC01E03F	05	3.50	2.25
Exercise Total Time (seconds)		62	55

3. For you, how often are the things you studied in science class

A. interesting?

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

B. too difficult?

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

C. too easy?

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

D. things you have already learned in school?

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

E. things you have already learned outside of school?

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

F. facts you have to memorize?

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC01E04

NAEP #: C01E04-23

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17
Overlap: 1976-77 Package-Exercise:		04-04	04-04
National P-value:			
RC01E04A	00	.14	.21
RC01E04A	01	2.96	3.20
RC01E04A	02	12.39	16.04
RC01E04A	03	28.60	27.67
RC01E04A	04	36.71	36.45
RC01E04A	05	19.21	16.43
RC01E04B	00	.27	.19
RC01E04B	01	7.72	9.24
RC01E04B	02	38.17	41.50
RC01E04B	03	33.22	35.29
RC01E04B	04	14.99	11.22
RC01E04B	05	5.62	2.55
RC01E04C	00	.29	.17
RC01E04C	01	2.08	2.97
RC01E04C	02	6.45	10.20
RC01E04C	03	18.95	25.88
RC01E04C	04	32.96	32.59
RC01E04C	05	39.26	28.19
RC01E04D	00	.49	.34
RC01E04D	01	5.64	3.10
RC01E04D	02	25.48	18.43
RC01E04D	03	42.64	47.02
RC01E04D	04	18.84	23.83
RC01E04D	05	6.90	7.28
RC01E04E	00	.19	.17
RC01E04E	01	6.57	3.14
RC01E04E	02	31.51	25.09
RC01E04E	03	41.53	45.38
RC01E04E	04	14.70	19.73
RC01E04E	05	5.49	6.51
RC01E04F	00	.11	.11
RC01E04F	01	2.91	3.11
RC01E04F	02	8.60	13.02
RC01E04F	03	21.06	26.99
RC01E04F	04	35.93	33.42
RC01E04F	05	31.40	23.35
Exercise Total Time (seconds)		52	48

4. How often have science classes made you feel

A. uncomfortable?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

B. curious?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

C. stupid?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

D. confident?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

E. successful?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

F. unhappy?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

B-C01E04-81A

Release #: RC01E05

NAEP #: C01E05-1

Content Classification: 0. Affective
    Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-01

National P-value:

RC01E05A	00	.27
RC01E05A	01	94.58
RC01E05A	02	4.21
RC01E05A	09	.95
RC01E05B	00	.55
RC01E05B	01	57.28
RC01E05B	02	33.83
RC01E05B	09	8.34

Exercise Total Time (seconds) 49

1. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

		Yes	No	I don't know.
A.	Do you have any science in school?	○	○	○

		Yes	No	I don't know.
B.	Do you wish you had more science in school?	○	○	○

C01E05-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC01E06

NAEP #: C01E06-1

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-02

National P-value:

RC01E06A	00	.17
RC01E06A	01	62.38
RC01E06A	02	26.57
RC01E06A	09	10.88
RC01E06B	00	.24
RC01E06B	01	85.01
RC01E06B	02	8.91
RC01E06B	09	5.84
RC01E06C	00	.24
RC01E06C	01	4.51
RC01E06C	02	89.06
RC01E06C	09	6.19
RC01E06D	00	.29
RC01E06D	01	49.93
RC01E06D	02	38.45
RC01E06D	09	11.33
RC01E06E	00	.38
RC01E06E	01	56.21
RC01E06E	02	17.80
RC01E06E	09	25.61

Exercise Total Time (seconds) 81

2. When you have science in school, how does it usually make you feel?

Does science make you feel

	Yes	No	I don't know.
A. happy?	○	○	○
B. interested?	○	○	○
C. dumb?	○	○	○
D. excited?	○	○	○
E. successful?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

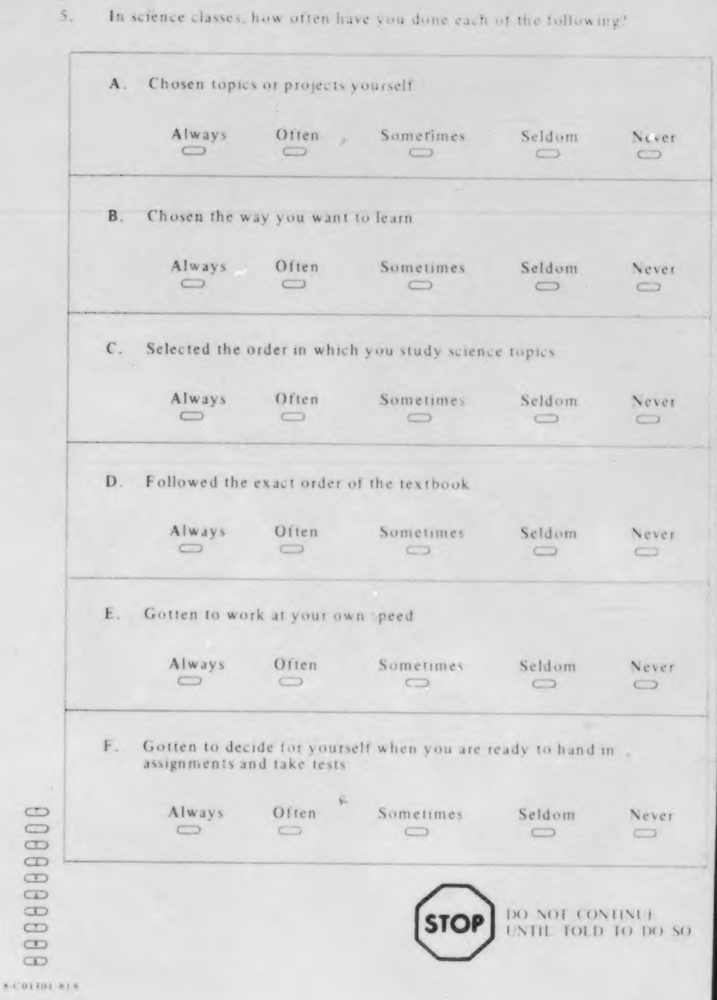
Release #: RC01I01

NAEP #: C01I01-23

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17
Overlap:			
1976-77 Package-Exercise:		04-05	04-05
National P-value:			
RC01I01A	00	.16	.11
RC01I01A	01	3.72	2.22
RC01I01A	02	13.35	16.62
RC01I01A	03	24.76	29.92
RC01I01A	04	28.69	33.38
RC01I01A	05	29.33	17.75
RC01I01B	00	.45	.14
RC01I01B	01	4.69	2.32
RC01I01B	02	6.39	5.79
RC01I01B	03	17.56	16.41
RC01I01B	04	29.20	35.83
RC01I01B	05	41.71	39.52
RC01I01C	00	.44	.35
RC01I01C	01	3.37	2.40
RC01I01C	02	10.17	5.38
RC01I01C	03	22.21	16.89
RC01I01C	04	25.22	31.40
RC01I01C	05	38.59	43.58
RC01I01D	00	.15	.21
RC01I01D	01	24.73	12.77
RC01I01D	02	22.18	26.32
RC01I01D	03	22.46	24.54
RC01I01D	04	18.78	22.75
RC01I01D	05	11.70	13.41
RC01I01E	00	.26	.17
RC01I01E	01	23.28	7.99
RC01I01E	02	21.41	15.96
RC01I01E	03	25.64	26.53
RC01I01E	04	17.58	28.77
RC01I01E	05	11.84	20.57
RC01I01F	00	.14	.17
RC01I01F	01	9.19	3.11
RC01I01F	02	7.49	5.32
RC01I01F	03	11.84	10.71
RC01I01F	04	15.64	21.69
RC01I01F	05	55.70	59.00
Exercise Total Time (seconds)		72	62



5. In science classes, how often have you done each of the following?

A. Chosen topics or projects yourself

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

B. Chosen the way you want to learn

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

C. Selected the order in which you study science topics

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

D. Followed the exact order of the textbook

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

E. Gotten to work at your own speed

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

F. Gotten to decide for yourself when you are ready to hand in assignments and take tests

○ Always ○ Often ○ Sometimes ○ Seldom ○ Never

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC01T01

NAEP #: C01T01-23

Content Classification: 0. **Affective**
Sub-Classification: 1. **Attitudes toward science classes**

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		04-06	04-06
National P-value:			
RC01T01A	00	.08	.19
RC01T01A	01	13.27	12.73
RC01T01A	02	28.74	31.18
RC01T01A	03	31.28	29.84
RC01T01A	04	18.29	20.16
RC01T01A	05	8.34	5.90
RC01T01B	00	.31	.17
RC01T01B	01	15.84	17.14
RC01T01B	02	24.77	29.69
RC01T01B	03	31.49	30.48
RC01T01B	04	19.08	18.51
RC01T01B	05	8.52	4.00
RC01T01C	00	.25	.35
RC01T01C	01	6.25	3.42
RC01T01C	02	13.88	13.22
RC01T01C	03	32.01	37.01
RC01T01C	04	30.39	31.56
RC01T01C	05	17.22	14.44
RC01T01D	00	.10	.26
RC01T01D	01	32.10	24.28
RC01T01D	02	36.16	42.91
RC01T01D	03	20.19	22.62
RC01T01D	04	8.18	7.95
RC01T01D	05	3.28	1.99
RC01T01E	00	.33	.23
RC01T01E	01	4.21	4.42
RC01T01E	02	14.51	17.93
RC01T01E	03	30.77	37.21
RC01T01E	04	26.86	27.25
RC01T01E	05	23.32	12.96
RC01T01F	00	.22	.11
RC01T01F	01	12.58	6.43
RC01T01F	02	26.06	23.38
RC01T01F	03	29.80	35.95
RC01T01F	04	19.58	24.14
RC01T01F	05	11.75	7.98
Exercise Total Time (seconds)		61	56

6. How often have your science teachers

A. encouraged you to state your opinion?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

B. recognized your right to have your own opinion?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

C. admitted that they don't know something?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

D. encouraged you to think for yourself?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

E. taken a personal interest in you?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

F. encouraged you to be creative?

Always	Often	Sometimes	Seldom	Never
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC01T02

NAEP #: C01T02-23

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17
Overlap:			
1976-77 Package-Exercise:		04-07	04-07
National P-value:			
RC01T02A	00	.29	.22
RC01T02A	01	28.62	39.79
RC01T02A	02	47.19	41.24
RC01T02A	03	19.66	14.11
RC01T02A	04	2.89	3.93
RC01T02A	05	1.35	.71
RC01T02B	00	.32	.40
RC01T02B	01	16.06	14.06
RC01T02B	02	47.14	44.70
RC01T02B	03	22.73	22.06
RC01T02B	04	10.53	14.11
RC01T02B	05	3.22	4.66
RC01T02C	00	.21	.17
RC01T02C	01	22.73	13.13
RC01T02C	02	35.35	34.79
RC01T02C	03	18.40	19.77
RC01T02C	04	14.51	20.92
RC01T02C	05	6.80	11.22
RC01T02D	00	.41	.16
RC01T02D	01	13.75	16.20
RC01T02D	02	38.22	40.99
RC01T02D	03	29.79	21.40
RC01T02D	04	12.44	15.11
RC01T02D	05	5.38	6.15
RC01T02E	00	.24	.11
RC01T02E	01	22.78	28.16
RC01T02E	02	40.59	44.49
RC01T02E	03	22.47	14.22
RC01T02E	04	9.04	9.35
RC01T02E	05	4.88	3.68
Exercise Total Time (seconds)		67	60

7. Tell how much you agree or disagree with each of the following statements regarding your present or most recent science teacher. My present or most recent science teacher

A. really likes science.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

B. wants students to point out mistakes he or she makes.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

C. makes science exciting.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

D. is enthusiastic.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

E. is willing to share opinions on questions about things like overpopulation or pollution.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

R-C01T02-81R

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC01T03

NAEP #: C01T03-1

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 06-02

National P-value:

RC01T03A	00	.22
RC01T03A	01	89.73
RC01T03A	02	6.37
RC01T03A	09	3.68
RC01T03B	00	.45
RC01T03B	01	73.32
RC01T03B	02	11.37
RC01T03B	09	14.86
RC01T03C	00	.47
RC01T03C	01	65.89
RC01T03C	02	23.49
RC01T03C	09	10.15
RC01T03D	00	.43
RC01T03D	01	45.09
RC01T03D	02	45.04
RC01T03D	09	9.45
RC01T03E	00	.74
RC01T03E	01	36.52
RC01T03E	02	2.34
RC01T03E	09	60.40
RC01T03F	00	.26
RC01T03F	01	70.43
RC01T03F	02	20.77
RC01T03F	09	8.54
RC01T03G	00	.24
RC01T03G	01	68.15
RC01T03G	02	5.09
RC01T03G	09	26.53

Exercise Total Time (seconds) 124

2. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

Tell what you think about each of the following questions.

		Yes	No	I don't know.
A.	In science, does your teacher ask questions about science?	○	○	○
B.	In science, does your teacher like for you to ask questions about science?	○	○	○
C.	In science, does your teacher ever let you give your own ideas?	○	○	○
D.	In science, does your teacher ever say "I don't know?"	○	○	○
E.	Does your teacher really like science?	○	○	○
F.	Does your teacher usually make science exciting?	○	○	○
G.	Does your teacher know a lot about science?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

S-C01T03-S1S

Release #: RC01U01

NAEP #: C01U01-23

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 04-08	17 04-08
National P-value:			
RC01U01A	00	.20	.15
RC01U01A	01	27.62	26.94
RC01U01A	02	48.10	53.27
RC01U01A	03	13.93	12.00
RC01U01A	04	7.30	5.65
RC01U01A	05	2.86	1.99
RC01U01B	00	.30	.15
RC01U01B	01	2.47	1.82
RC01U01B	02	6.75	5.08
RC01U01B	03	10.52	8.15
RC01U01B	04	38.57	46.87
RC01U01B	05	41.40	37.93
RC01U01C	00	.31	.28
RC01U01C	01	28.71	20.02
RC01U01C	02	40.87	42.38
RC01U01C	03	16.09	17.05
RC01U01C	04	8.74	13.10
RC01U01C	05	5.29	7.17
RC01U01D	00	.18	.15
RC01U01D	01	15.14	13.72
RC01U01D	02	42.12	39.26
RC01U01D	03	19.98	19.24
RC01U01D	04	17.27	23.11
RC01U01D	05	5.30	4.53
RC01U01E	00	.21	.13
RC01U01E	01	29.56	21.47
RC01U01E	02	44.40	43.76
RC01U01E	03	17.05	19.49
RC01U01E	04	6.16	12.66
RC01U01E	05	2.62	2.48
Exercise Total Time (seconds)		68	61

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8. Tell how much you agree or disagree with each of the following statements regarding science classes in general.

A. Science classes are useful.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

B. The things you learn in science classes have nothing to do with the real world.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

C. Science should be required in school.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

D. Much of what you learn in science classes is useful in every day life.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

E. Much of what you learn in science classes will be useful in the future.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

○
○
○
○
○
○
○
○
○
○

8-C01U01-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC01U03

NAEP #: C01U03-1

Content Classification: 0. Affective
Sub-Classification: 1. Attitudes toward science classes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-16

National P-value:

RC01U03A	00	.21
RC01U03A	01	73.86
RC01U03A	02	22.69
RC01U03A	09	3.22
RC01U03B	00	.27
RC01U03B	01	93.92
RC01U03B	02	3.67
RC01U03B	09	2.15

Exercise Total Time (seconds) 51

16. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

	Yes	No	I don't know.
A. Are the things you learn in science useful to you when you are not at school?	○	○	○
B. Do you think that knowing a lot about science will help you when you grow up?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

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Release #:        RC01X01

NAEP #:           C01X01-23

Content Classification:     0. Affective
    Sub-Classification:     1. Attitudes toward science classes

Assessed In:              1976-77
Release Status:           Released after 1976-77

Overlap:                                         13       17
1976-77 Package-Exercise:                      04-09    04-09

National P-value:
     RC01X01A      00                            .21      .11
     RC01X01A      01                          14.95    13.26
     RC01X01A      02                          31.89    34.41
     RC01X01A      03                          27.77    31.12
     RC01X01A      04                          25.18    21.09
     RC01X01B      00                            .14      .11
     RC01X01B      01                          10.19    12.51
     RC01X01B      02                          31.24    34.21
     RC01X01B      03                          29.03    33.28
     RC01X01B      04                          29.39    19.88
     RC01X01C      00                            .21      .19
     RC01X01C      01                          21.61    20.12
     RC01X01C      02                          36.06    41.58
     RC01X01C      03                          24.54    25.20
     RC01X01C      04                          17.58    12.91
     RC01X01D      00                            .16      .15
     RC01X01D      01                           1.80     1.24
     RC01X01D      02                           6.51     6.40
     RC01X01D      03                          18.89    23.21
     RC01X01D      04                          72.65    69.01
     RC01X01E      00                            .21      .15
     RC01X01E      01                          12.99     6.56
     RC01X01E      02                          31.81    22.43
     RC01X01E      03                          32.57    35.60
     RC01X01E      04                          22.42    35.26
     RC01X01F      00                            .07      .19
     RC01X01F      01                           9.47     8.04
     RC01X01F      02                          31.79    28.87
     RC01X01F      03                          34.76    37.09
     RC01X01F      04                          23.91    25.81
     RC01X01G      00                            .07      .23
     RC01X01G      01                          26.62    14.12
     RC01X01G      02                          41.38    34.88
     RC01X01G      03                          20.58    28.94
     RC01X01G      04                          11.36    21.83
     RC01X01H      00                            .20      .11
     RC01X01H      01                          14.56     9.85
     RC01X01H      02                          30.92    27.37
     RC01X01H      03                          31.17    32.91
     RC01X01H      04                          23.15    29.76

Exercise Total Time (seconds)                     83       77
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9. How often have you done each of the following activities when <u>not required</u> for science classes?

A. Read science articles in magazines

Often	Sometimes	Seldom	Never
○	○	○	○

B. Read science articles in newspapers

Often	Sometimes	Seldom	Never
○	○	○	○

C. Watched science shows on TV

Often	Sometimes	Seldom	Never
○	○	○	○

D. Gone to hear people give talks on science

Often	Sometimes	Seldom	Never
○	○	○	○

E. Read books about science or scientists

Often	Sometimes	Seldom	Never
○	○	○	○

F. Talked about science topics with your friends

Often	Sometimes	Seldom	Never
○	○	○	○

G. Done science projects

Often	Sometimes	Seldom	Never
○	○	○	○

H. Worked with science-related hobbies

Often	Sometimes	Seldom	Never
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

8-C01X01-618

Release #: RC02A01

NAEP #: C02A01-23

Content Classification: 0. Affective
Sub-Classification: 2. Vocational and educational intentions

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 09-14	17 09-12
National P-value:			
RC02A01A	00	.21	.13
RC02A01A	01	12.97	25.58
RC02A01A	02	19.59	20.98
RC02A01A	03	32.29	15.66
RC02A01A	04	21.10	14.26
RC02A01A	05	13.85	23.38
RC02A01B	00	.30	.10
RC02A01B	01	17.52	15.01
RC02A01B	02	30.72	23.65
RC02A01B	03	24.27	25.86
RC02A01B	04	19.35	23.22
RC02A01B	05	7.83	12.17
RC02A01C	00	.28	.16
RC02A01C	01	17.03	10.91
RC02A01C	02	25.51	21.16
RC02A01C	03	27.31	29.07
RC02A01C	04	18.21	24.27
RC02A01C	05	11.65	14.43
RC02A01D	00	.26	.22
RC02A01D	01	44.60	30.72
RC02A01D	02	36.35	40.03
RC02A01D	03	9.94	12.79
RC02A01D	04	5.78	11.95
RC02A01D	05	3.07	4.29
RC02A01E	00	.14	.10
RC02A01E	01	27.39	30.19
RC02A01E	02	46.57	46.98
RC02A01E	03	16.66	13.71
RC02A01E	04	5.42	6.97
RC02A01E	05	1.82	2.05
RC02A01F	00	.14	.13
RC02A01F	01	22.52	25.92
RC02A01F	02	25.98	25.47
RC02A01F	03	24.81	17.69
RC02A01F	04	17.63	21.21
RC02A01F	05	8.92	9.59
Exercise Total Time (seconds)		72	70

14. A. Do you plan to stop taking science courses after you have taken as many as your school requires?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. Would you like to work at some job that lets you use what you know about science?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. Do you want to work with scientists in an effort to solve problems?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

D. Would you like to visit a scientist at work?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

E. Do you think that there are science related jobs that you can learn to do?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

F. Would you like to know more about jobs in a science or engineering field?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-C02A01-61A

Release #: RC02A02

NAEP #: C02A02-23

Content Classification: 0. Affective
Sub-Classification: 2. Vocational and educational intentions

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 09-13	17 09-11
National P-value:			
RC02A02A	00	.26	.13
RC02A02A	01	17.00	12.00
RC02A02A	02	28.53	30.62
RC02A02A	03	26.50	21.63
RC02A02A	04	18.72	23.24
RC02A02A	05	9.00	12.38
RC02A02B	00	.49	.19
RC02A02B	01	10.12	14.34
RC02A02B	02	23.96	30.06
RC02A02B	03	27.37	26.26
RC02A02B	04	25.85	20.07
RC02A02B	05	12.21	9.08
RC02A02C	00	.51	.21
RC02A02C	01	8.10	6.39
RC02A02C	02	23.73	22.32
RC02A02C	03	20.80	17.12
RC02A02C	04	27.40	32.00
RC02A02C	05	19.46	21.97
RC02A02D	00	.33	.21
RC02A02D	01	33.05	33.17
RC02A02D	02	43.92	47.40
RC02A02D	03	13.73	13.40
RC02A02D	04	5.39	4.10
RC02A02D	05	3.59	1.72
RC02A02E	00	.47	.17
RC02A02E	01	17.05	11.34
RC02A02E	02	28.95	29.48
RC02A02E	03	18.82	20.31
RC02A02E	04	18.24	23.37
[illegible]E	05	16.47	15.34
[illegible]2F	00	.37	.12
[illegible]2F	01	36.67	29.79
R[illegible]2F	02	29.54	33.22
RC02A02F	03	17.53	18.82
RC02A02F	04	10.35	12.65
RC02A02F	05	5.54	5.41
Exercise Total Time (seconds)		62	61

13. All of the following are "science-related" tasks. For each one, tell if you would be interested in doing it.

A. Working in a laboratory

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. Making field studies

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. Reading science articles

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

D. Sharing ideas with others

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

E. Writing reports about your findings

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

F. Designing and building things

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-C02A02-R18

```
Release #:        RC02A03

NAEP #:           C02A03-23

Content Classification:     0. Affective
    Sub-Classification:     2. Vocational and educational intentions

Assessed In:              1976-77
Release Status:           Released after 1976-77

Overlap:                                          13       17
1976-77 Package-Exercise:                        09-16    09-14

National P-value:
    RC02A03A     00                                .05      .17
    RC02A03A     01                              17.78    13.56
    RC02A03A     02                              31.47    29.08
    RC02A03A     03                              23.55    24.89
    RC02A03A     04                              17.25    21.51
    RC02A03A     05                               9.90    10.79
    RC02A03B     00                                .13      .13
    RC02A03B     01                               6.50     6.95
    RC02A03B     02                              15.44    20.26
    RC02A03B     03                              28.18    30.44
    RC02A03B     04                              39.46    35.46
    RC02A03B     05                              10.29     6.76
    RC02A03C     00                                .15      .24
    RC02A03C     01                              17.24    13.69
    RC02A03C     02                              48.24    42.28
    RC02A03C     03                              21.28    24.37
    RC02A03C     04                               9.65    15.15
    RC02A03C     05                               3.44     4.28
    RC02A03D     00                                .23      .10
    RC02A03D     01                              11.94    11.97
    RC02A03D     02                              14.19    18.85
    RC02A03D     03                              21.33    22.87
    RC02A03D     04                              29.31    30.87
    RC02A03D     05                              22.99    15.35
    RC02A03E     00                                .13      .15
    RC02A03E     01                              12.05     6.25
    RC02A03E     02                              30.56    21.97
    RC02A03E     03                              33.49    34.71
    RC02A03E     04                              19.49    29.91
    RC02A03E     05                               4.28     7.01
    RC02A03F     00                                .08      .10
    RC02A03F     01                               8.85    10.96
    RC02A03F     02                              21.31    27.60
    RC02A03F     03                              28.18    25.08
    RC02A03F     04                              28.82    26.66
    RC02A03F     05                              12.76     9.60
    RC02A03G     00                                .10      .15
    RC02A03G     01                               5.34     4.04
    RC02A03G     02                              10.68    12.50
    RC02A03G     03                              24.54    29.30
    RC02A03G     04                              37.38    37.30
    RC02A03G     05                              21.95    16.71

Exercise Total Time (seconds)                       66       65
```

16. For me, working in a science related field would

A. be fun.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

B. be too much work.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

C. be something I could do.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

D. be boring.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

E. make me important.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

F. take too much education.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

G. be lonely.

Definitely Yes ○ | Probably Yes ○ | Not Sure ○ | Probably Not ○ | Definitely Not ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC02A04

NAEP #: C02A04-23

Content Classification: 0. Affective
Sub-Classification: 2. Vocational and educational intentions

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		09-15	09-13
National P-value:			
RC02A04A	00	.16	.20
RC02A04A	01	9.03	12.48
RC02A04A	02	27.62	29.80
RC02A04A	03	37.08	30.15
RC02A04A	04	20.73	21.32
RC02A04A	05	5.38	6.05
RC02A04B	00	.09	.22
RC02A04B	01	17.37	19.94
RC02A04B	02	40.06	35.39
RC02A04B	03	25.25	21.33
RC02A04B	04	13.70	17.39
RC02A04B	05	3.54	5.72
RC02A04C	00	.13	.18
RC02A04C	01	22.54	23.04
RC02A04C	02	40.83	41.47
RC02A04C	03	24.26	22.56
RC02A04C	04	10.07	10.35
RC02A04C	05	2.16	2.41
RC02A04D	00	.05	.13
RC02A04D	01	17.41	15.50
RC02A04D	02	37.15	38.56
RC02A04D	03	23.08	19.58
RC02A04D	04	16.46	17.69
RC02A04D	05	5.85	8.54
Exercise Total Time (seconds)		48	49

15. For me, the education and training needed to prepare me to work in a scientific field would

A. cost too much money.

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. be worth it in the long run.

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. open many job opportunities for me.

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

D. be worthwhile, even if I didn't go into a scientific field.

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC02A08

NAEP #: C02A08-1

Content Classification: 0. Affective
Sub-Classification: 2. Vocational and educational intentions

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 07-12

National P-value:

RC02A08A	00	.83
RC02A08A	01	64.19
RC02A08A	02	28.16
RC02A08A	09	6.83
RC02A08B	00	1.02
RC02A08B	01	44.72
RC02A08B	02	34.83
RC02A08B	09	19.43
RC02A08C	00	1.17
RC02A08C	01	27.36
RC02A08C	02	60.96 ~
RC02A08C	09	10.51
RC02A08D	00	1.18
RC02A08D	01	19.66
RC02A08D	02	67.96
RC02A08D	09	11.20
RC02A08E	00	.83
RC02A08E	01	69.30
RC02A08E	02	17.99
RC02A08E	09	11.88
RC02A08F	00	1.13
RC02A08F	01	13.98
RC02A08F	02	73.23
RC02A08F	09	11.66

Exercise Total Time (seconds) 91

12. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

Think about being a scientist. Would being a scientist

	Yes	No	I don't know.
A. be fun for you?	○	○	○
B. make you rich?	○	○	○
C. be too much work for you?	○	○	○
D. be boring for you?	○	○	○
E. make you important?	○	○	○
F. make you lonely?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC03A01

NAEP #: C03A01-23

Content Classification: 0. Affective
Sub-Classification: 3. Personal involvement in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 10-09	17 10-09
National P-value:			
RC03A01A	00	.16	.14
RC03A01A	01	27.16	38.62
RC03A01A	02	39.90	38.27
RC03A01A	03	16.50	11.51
RC03A01A	04	12.71	9.39
RC03A01A	05	3.58	2.08
RC03A01B	00	.68	.58
RC03A01B	01	25.51	34.35
RC03A01B	02	34.71	35.72
RC03A01B	03	21.95	16.27
RC03A01B	04	13.47	10.59
RC03A01B	05	3.70	2.49
RC03A01C	00	.31	.50
RC03A01C	01	16.08	19.08
RC03A01C	02	30.56	35.93
RC03A01C	03	24.62	21.76
RC03A01C	04	19.90	18.82
RC03A01C	05	8.53	3.92
RC03A01D	00	.81	.37
RC03A01D	01	8.63	26.87
RC03A01D	02	13.91	27.40
RC03A01D	03	19.61	15.98
RC03A01D	04	26.78	17.87
RC03A01D	05	30.26	11.53
RC03A01E	00	.41	.23
RC03A01E	01	6.60	7.55
RC03A01E	02	24.09	23.76
RC03A01E	03	24.78	25.75
RC03A01E	04	24.12	29.43
RC03A01E	05	20.00	13.28
RC03A01F	00	.78	.47
RC03A01F	01	9.97	11.37
RC03A01F	02	25.81	28.61
RC03A01F	03	25.26	25.58
RC03A01F	04	23.92	24.17
RC03A01F	05	14.25	9.80
RC03A01G	00	.85	.40
RC03A01G	01	28.43	24.67
RC03A01G	02	29.84	33.58
RC03A01G	03	13.68	13.32
RC03A01G	04	14.23	16.24
RC03A01G	05	12.97	11.79
Exercise Total Time (seconds)		**67**	**68**

9. For each of the world problems below, tell whether or not the things you can do really can help solve these problems. Can you help solve the problems of

A. pollution?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. energy waste?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. food shortages?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

D. overpopulation?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

E. disease?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

F. running out of natural resources?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

G. accidents?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC03A02

NAEP #: C03A02-23

Content Classification: 0. Affective
Sub-Classification: 3. Personal involvement in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		10-10	10-10
National P-value:			
RC03A02A	00	.06	.20
RC03A02A	01	45.76	51.68
RC03A02A	02	40.75	39.69
RC03A02A	03	7.20	4.66
RC03A02A	04	4.60	3.03
RC03A02A	05	1.63	.73
RC03A02B	00	.12	.20
RC03A02B	01	54.17	46.28
RC03A02B	02	32.65	35.52
RC03A02B	03	7.08	8.37
RC03A02B	04	3.99	7.11
RC03A02B	05	1.99	2.50
RC03A02C	00	.14	.23
RC03A02C	01	30.52	30.74
RC03A02C	02	38.13	38.45
RC03A02C	03	15.83	14.44
RC03A02C	04	9.97	10.74
RC03A02C	05	5.41	5.39
RC03A02D	00	.06	.20
RC03A02D	01	24.32	25.90
RC03A02D	02	40.78	38.22
RC03A02D	03	18.49	16.86
RC03A02D	04	10.87	13.09
RC03A02D	05	5.47	5.73
RC03A02E	00	.02	.14
RC03A02E	01	43.50	60.12
RC03A02E	02	34.79	26.09
RC03A02E	03	11.46	4.90
RC03A02E	04	5.38	3.51
RC03A02E	05	4.85	3.24
RC03A02F	00	.11	.19
RC03A02F	01	20.14	34.96
RC03A02F	02	36.23	40.29
RC03A02F	03	20.59	13.53
RC03A02F	04	13.95	7.64
RC03A02F	05	8.98	3.40
RC03A02G	00	.10	.16
RC03A02G	01	56.40	63.48
RC03A02G	02	31.61	29.45
RC03A02G	03	6.95	4.64
RC03A02G	04	2.68	1.82
RC03A02G	05	2.27	.45
RC03A02H	00	.04	.20
RC03A02H	01	35.49	23.24
RC03A02H	02	24.81	25.40
RC03A02H	03	15.54	18.59
RC03A02H	04	12.19	17.18
RC03A02H	05	11.93	15.38
Exercise Total Time (seconds)		97	91

10. Which of the things on this and the next page would you be willing to do to help solve world problems, even if it is inconvenient? Would you be willing to

A. use less electricity?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. walk and ride bikes more often?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. spend a day helping clean up litter from a street, park, or road?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

D. separate trash (bottles, cans, paper, etc.) for recycling?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

10. (Continued)

Would you be willing to

E. drive or ride in a small economy car?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

F. use less heat in the winter to save fuel?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

G. use returnable bottles rather than "throw away" bottles?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

H. stay home from a party when you have a bad cold?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

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Release #:        RC03A03

NAEP #:           C03A03-23

Content Classification:     0. Affective
    Sub-Classification:     3. Personal involvement in science


Assessed In:              1976-77
Release Status:           Released after 1976-77

Overlap:                                        13         17
1976-77 Package-Exercise:                     10-11      10-11

National P-value:
    RC03A03A      00                             .07        .12
    RC03A03A      01                           17.69      16.91
    RC03A03A      02                           39.42      49.19
    RC03A03A      03                           33.84      26.24
    RC03A03A      04                            7.93       5.19
    RC03A03A      05                            1.05        .35
    RC03A03B      00                             .13        .19
    RC03A03B      01                           57.66      64.08
    RC03A03B      02                           23.03      23.59
    RC03A03B      03                           12.36       8.49
    RC03A03B      04                            5.07       3.12
    RC03A03B      05                            1.73        .55
    RC03A03C      00                             .21        .21
    RC03A03C      01                           10.62       8.83
    RC03A03C      02                           23.51      26.51
    RC03A03C      03                           27.63      29.60
    RC03A03C      04                           22.70      25.21
    RC03A03C      05                           15.33       9.64
    RC03A03D      00                             .02        .16
    RC03A03D      01                            5.16       4.07
    RC03A03D      02                           20.63      24.35
    RC03A03D      03                           41.98      43.57
    RC03A03D      04                           24.41      23.81
    RC03A03D      05                            7.79       4.04
    RC03A03E      00                             .09        .21
    RC03A03E      01                           11.58      10.31
    RC03A03E      02                           10.07       8.75
    RC03A03E      03                           15.30      13.99
    RC03A03E      04                           24.04      24.99
    RC03A03E      05                           38.92      41.74
    RC03A03F      00                             .14        .19
    RC03A03F      01                           45.61      44.11
    RC03A03F      02                           29.50      41.35
    RC03A03F      03                           13.88      10.34
    RC03A03F      04                            6.36       2.92
    RC03A03F      05                            4.52       1.08

Exercise Total Time (seconds)                     60         59
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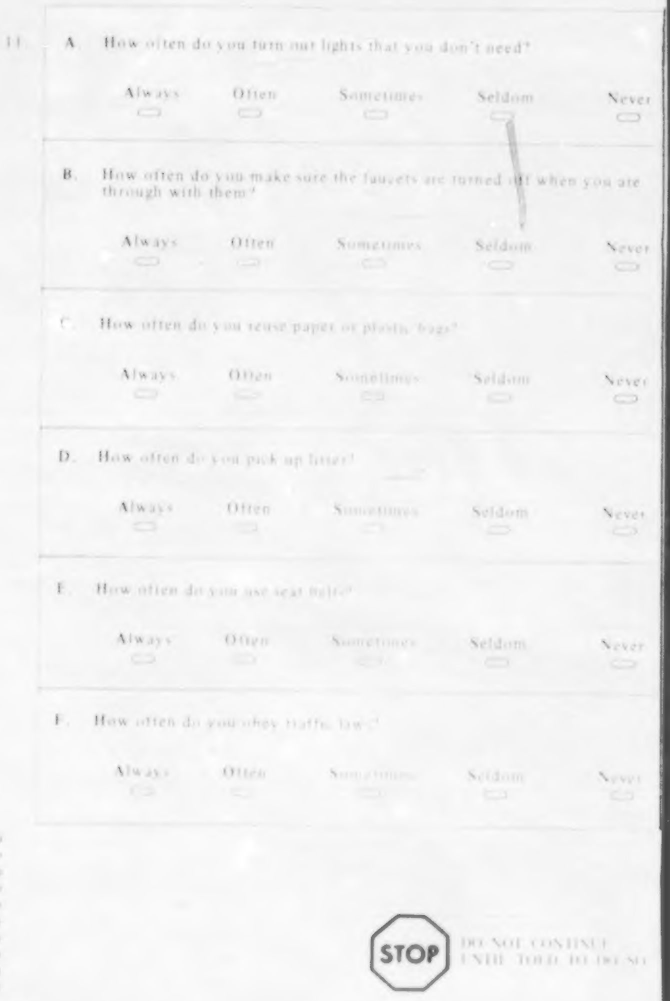

11. A. How often do you turn out lights that you don't need?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

B. How often do you make sure the faucets are turned off when you are through with them?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

C. How often do you reuse paper or plastic bags?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

D. How often do you pick up litter?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

E. How often do you use seat belts?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

F. How often do you obey traffic laws?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC03A04

NAEP #: C03A04-23

Content Classification: 0. Affective
Sub-Classification: 3. Personal involvement in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		10-12	10-12
National P-value:			
RC03A04A	00	.02	.17
RC03A04A	01	13.26	8.73
RC03A04A	02	28.78	27.62
RC03A04A	03	29.88	38.37
RC03A04A	04	28.05	25.11
RC03A04B	00	.07	.26
RC03A04B	01	12.90	8.73
RC03A04B	02	15.95	14.50
RC03A04B	03	23.09	22.48
RC03A04B	04	48.00	54.04
RC03A04C	00	.03	.36
RC03A04C	01	33.50	39.86
RC03A04C	02	29.47	35.34
RC03A04C	03	25.78	17.47
RC03A04C	04	11.22	6.98
Exercise Total Time (seconds)		38	37

12. A. How many times have you helped with a litter clean-up project?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

B. How many times have you separated trash (bottles, cans, paper, etc.) for recycling?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

C. How many times have you caused pollution?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC03A05*

NAEP #: C02A05-1

Content Classification: 0. Affective
Sub-Classification: 3. Personal involvement in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 04-01

National P-value:

RC03A05A*	00	.21
RC03A05A*	01	93.00
RC03A05A*	02	3.58
RC03A05A*	09	3.21
RC03A05B*	00	.28
RC03A05B*	01	84.83
RC03A05B*	02	8.74
RC03A05B*	09	6.14
RC03A05C*	00	.28
RC03A05C*	01	58.04
RC03A05C*	02	31.77
RC03A05C*	09	9.90
RC03A05D*	00	.26
RC03A05D*	01	83.73
RC03A05D*	02	9.98
RC03A05D*	09	6.02

Exercise Total Time (seconds) 89

1. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

For each of the world problems below, tell whether or not you think it is a serious problem in the world today.

		Yes	No	I don't know.
A.	Do you think pollution is a serious problem in the world today?	○	○	○
B.	Do you think energy waste is a serious problem in the world today?	○	○	○
C.	Do you think food shortage is a serious problem in the world today?	○	○	○
D.	Do you think disease is a serious problem in the world today?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

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Release #:        RC03A06*

NAEP #:           C02A06-1

Content Classification:     0. Affective
    Sub-Classification:     3. Personal involvement in science

Assessed In:              1976-77
Release Status:           Released after 1976-77

Overlap:                             9
1976-77 Package-Exercise:          04-02

National P-value:
    RC03A06A*     00                 .12
    RC03A06A*     01               73.90
    RC03A06A*     02               17.69
    RC03A06A*     09                8.29
    RC03A06B*     00                 .22
    RC03A06B*     01               70.64
    RC03A06B*     02               19.21
    RC03A06B*     09                9.93
    RC03A06C*     00                 .13
    RC03A06C*     01               49.78
    RC03A06C*     02               36.05
    RC03A06C*     09               14.04
    RC03A06D*     00                 .14
    RC03A06D*     01               41.41
    RC03A06D*     02               43.66
    RC03A06D*     09               14.79

Exercise Total Time (seconds)        58
```

2. For each of the world problems below, tell if the things you can do really can help solve these problems. Can you help solve the problems of

A.	pollution?	Yes ○	No ○	I don't know. ○
B.	energy waste?	Yes ○	No ○	I don't know. ○
C.	food shortages?	Yes ○	No ○	I don't know. ○
D.	disease?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

```
Release #:        RC03A07*

NAEP #:           C02A07-1

Content Classification:      0. Affective
     Sub-Classification:     3. Personal involvement in science


Assessed In:               1976-77
Release Status:            Released after 1976-77

Overlap:                                9
1976-77 Package-Exercise:             04-03

National P-value:
     RC03A07A*     01                 90.90
     RC03A07A*     02                  6.08
     RC03A07A*     09                  3.01
     RC03A07B*     00                   .15
     RC03A07B*     01                 79.12
     RC03A07B*     02                 13.88
     RC03A07B*     09                  6.85
     RC03A07C*     00                   .12
     RC03A07C*     01                 85.93
     RC03A07C*     02                  8.39
     RC03A07C*     09                  5.56
     RC03A07D*     00                   .15
     RC03A07D*     01                 74.55
     RC03A07D*     02                 12.67
     RC03A07D*     09                 12.63
     RC03A07E*     00                   .16
     RC03A07E*     01                 52.29
     RC03A07E*     02                 30.51
     RC03A07E*     09                 17.04
     RC03A07F*     00                   .04
     RC03A07F*     01                 73.44
     RC03A07F*     02                 17.26
     RC03A07F*     09                  9.26
     RC03A07G*     01                 83.47
     RC03A07G*     02                  9.81
     RC03A07G*     09                  6.72
     RC03A07H*     01                 92.64
     RC03A07H*     02                  4.69
     RC03A07H*     09                  2.66

Exercise Total Time (seconds)         121
```

3. Which of the things below would you be willing to do to help solve world problems, even if it is inconvenient? Would you be willing to

		Yes	No	I don't know.
A.	use less electricity?	○	○	○
B.	walk and ride bikes more often?	○	○	○
C.	spend a day helping clean up litter from a street, park or road?	○	○	○
D.	separate trash (bottles, cans, paper, etc.) for recycling?	○	○	○
E.	drive or ride in a small economy car?	○	○	○
F.	use less heat in the winter to save fuel?	○	○	○
G.	use returnable bottles rather than "throw away" bottles?	○	○	○
H.	stay home from a party when you have a bad cold?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

S-C02A07-81S

Release #: RC04A01

NAEP #: C04A01-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		07-01	07-01
National P-value:			
RC04A01A	00	.40	.14
RC04A01A	01	8.06	9.08
RC04A01A	02	31.75	45.92
RC04A01A	03	50.01	40.22
RC04A01A	04	8.65	4.26
RC04A01A	05	1.12	.38
RC04A01B	00	.69	.19
RC04A01B	01	22.96	14.41
RC04A01B	02	41.09	45.84
RC04A01B	03	27.20	32.65
RC04A01B	04	6.88	5.89
RC04A01B	05	1.18	1.01
RC04A01C	00	.36	.20
RC04A01C	01	23.19	17.07
RC04A01C	02	26.99	32.33
RC04A01C	03	30.48	31.46
RC04A01C	04	15.25	16.10
RC04A01C	05	3.73	2.83
RC04A01D	00	.43	.16
RC04A01D	01	36.81	33.56
RC04A01D	02	25.13	30.49
RC04A01D	03	17.58	21.03
RC04A01D	04	14.68	11.70
RC04A01D	05	5.37	3.06
RC04A01E	00	.58	.13
RC04A01E	01	54.58	52.91
RC04A01E	02	23.23	26.62
RC04A01E	03	18.28	17.54
RC04A01E	04	2.73	2.00
RC04A01E	05	.60	.80
RC04A01F	00	.39	.11
RC04A01F	01	23.77	29.73
RC04A01F	02	35.87	38.34
RC04A01F	03	35.04	29.17
RC04A01F	04	3.89	2.00
RC04A01F	05	1.04	.66
RC04A01G	00	.33	.22
RC04A01G	01	9.75	7.23
RC04A01G	02	18.50	18.85
RC04A01G	03	40.20	47.74
RC04A01G	04	24.57	23.40
RC04A01G	05	6.64	2.57
RC04A01H	00	.11	.11
RC04A01H	01	26.90	18.43
RC04A01H	02	42.05	46.6
RC04A01H	03	22.55	26.67
RC04A01H	04	7.28	7.40
RC04A01H	05	1.11	.76
RC04A01I	00	.23	.20
RC04A01I	01	17.39	9.22
RC04A01I	02	27.87	28.33
RC04A01I	03	45.47	52.46
RC04A01I	04	6.97	8.16
RC04A01I	05	2.07	1.65
RC04A01J	00	.29	.38
RC04A01J	01	15.09	13.84
RC04A01J	02	37.19	47.04
RC04A01J	03	32.31	27.37
RC04A01J	04	12.69	10.39
RC04A01J	05	2.43	.99
RC04A01K	00	.16	.28
RC04A01K	01	8.14	4.56
RC04A01K	02	12.32	11.77
RC04A01K	03	37.84	43.49
RC04A01K	04	22.95	24.16
RC04A01K	05	18.59	15.75
RC04A01L	00	.25	.23
RC04A01L	01	10.33	8.85
RC04A01L	02	35.16	38.02
RC04A01L	03	35.55	36.88
RC04A01L	04	16.07	15.14
RC04A01L	05	2.64	.88
Exercise Total Time (seconds)		145	148

For each of the questions on this and the next page, tell how often you do these things.

A. How often do you try your ideas to see if they work?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

B. How often do you believe what you read in books about science?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

C. How often do you check your school work to see if it is accurate?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

D. How often do you read the labels when you are trying to decide whether or not to buy a product?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

E. Do you think it is important to look at all sides of a question before you make a decision?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

F. Do you believe that there are logical explanations for things you see happen?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

I. (Continued)

G. How often do you prefer being told an answer rather than having to find out the answer on your own?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

H. How often do you like to try to figure out how things work?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

I. When you find out that your ideas don't fit the facts, do you change your mind?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

J. How often do you keep working on a task even if you run into problems that you didn't expect?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

K. When you try out a new idea and find that it does not work, do you feel that you have wasted your time?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

L. How often do you gather a variety of information before you make a decision?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

8-C04A01-818

Release #: RC04A02

NAEP #: C04A02-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 07-02	17 07-02
National P-value:			
RC04A02A	00	.08	.13
RC04A02A	01	23.08	28.74
RC04A02A	02	28.85	31.51
RC04A02A	03	31.10	27.64
RC04A02A	04	16.90	11.99
RC04A02B	00	.11	.15
RC04A02B	01	34.01	42.26
RC04A02B	02	24.21	24.15
RC04A02B	03	27.35	22.27
RC04A02B	04	14.32	11.17
RC04A02C	00	.13	.07
RC04A02C	01	30.86	27.74
RC04A02C	02	20.63	21.62
RC04A02C	03	26.89	27.75
RC04A02C	04	21.49	22.82
RC04A02D	00	.11	.07
RC04A02D	01	55.36	47.01
RC04A02D	02	21.71	26.38
RC04A02D	03	16.34	20.07
RC04A02D	04	6.45	6.47
Exercise Total Time (seconds)		47	46

2. **A.** How often have you tried to fix something electrical?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

B. How often have you tried to fix something mechanical?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

C. How often have you tried to figure out what is wrong with an unhealthy plant?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

D. How often have you tried to figure out what is wrong with an unhealthy animal?

Many times	Not very often, but more than twice	Once or twice	Never
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC04A03

NAEP #: C04A03-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		07-04	07-04
National P-value:			
RC04A03A	00	.12	.11
RC04A03A	01	9.24	17.32
RC04A03A	02	32.33	38.41
RC04A03A	03	27.89	20.78
RC04A03A	04	20.34	17.55
RC04A03A	05	10.08	5.82
RC04A03B	00	.02	.29
RC04A03B	01	22.43	31.43
RC04A03B	02	37.65	40.20
RC04A03B	03	16.80	13.16
RC04A03B	04	13.29	9.68
RC04A03B	05	9.80	5.24
RC04A03C	00	.02	.38
RC04A03C	01	16.92	18.72
RC04A03C	02	28.24	33.77
RC04A03C	03	21.66	19.39
RC04A03C	04	19.31	19.07
RC04A03C	05	13.85	8.67
Exercise Total Time (seconds)		35	33

4. Could the things you have learned in science classes help you if you were

A. driving a car?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. cooking?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. shopping?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

S-C04A03-81S

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC04A04

NAEP #: C04A04-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17
Overlap:			
1976-77 Package-Exercise:		07-03	07-03
National P-value:			
RC04A04A	00	.07	.13
RC04A04A	01	28.07	19.41
RC04A04A	02	33.58	33.56
RC04A04A	03	30.57	36.20
RC04A04A	04	7.71	10.70
RC04A04B	00	.04	.12
RC04A04B	01	50.02	57.33
RC04A04B	02	26.21	24.78
RC04A04B	03	19.64	14.35
RC04A04B	04	4.09	3.42
RC04A04C	00	.48	.12
RC04A04C	01	37.50	45.21
RC04A04C	02	31.13	29.85
RC04A04C	03	25.33	20.07
RC04A04C	04	5.55	4.75
RC04A04D	00	.11	.09
RC04A04D	01	55.76	54.05
RC04A04D	02	24.44	25.95
RC04A04D	03	16.59	16.91
RC04A04D	04	3.10	3.00
RC04A04E	00	.03	.07
RC04A04E	01	42.45	48.24
RC04A04E	02	34.49	30.36
RC04A04E	03	18.62	17.71
RC04A04E	04	4.42	3.61
RC04A04F	00	.03	.07
RC04A04F	01	55.59	57.05
RC04A04F	02	27.02	26.83
RC04A04F	03	14.84	14.06
RC04A04F	04	2.52	1.99
Exercise Total Time (seconds)		61	60

1. In solving problems outside of science classes, how often have you

A. done an experiment?

○ Many times ○ Not very often, but more than twice ○ Once or twice ○ Never

B. taken measurements?

○ Many times ○ Not very often, but more than twice ○ Once or twice ○ Never

C. made careful observations?

○ Many times ○ Not very often, but more than twice ○ Once or twice ○ Never

D. worked on one part of a problem at a time?

○ Many times ○ Not very often, but more than twice ○ Once or twice ○ Never

E. tried to find out more facts about a problem?

○ Many times ○ Not very often, but more than twice ○ Once or twice ○ Never

F. thought of several ways to solve a problem?

○ Many times ○ Not very often, but more than twice ○ Once or twice ○ Never

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC04A05

NAEP #: C04A05-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 07-05	17 07-05
National P-value:			
RC04A05A	00		.05
RC04A05A	01	34.87	38.63
RC04A05A	02	46.46	48.63
RC04A05A	03	12.73	9.52
RC04A05A	04	4.79	2.57
RC04A05A	05	1.16	.61
RC04A05B	00	.04	.05
RC04A05B	01	4.39	3.26
RC04A05B	02	13.24	14.02
RC04A05B	03	15.68	15.48
RC04A05B	04	40.90	45.48
RC04A05B	05	25.75	21.71
RC04A05C	00		.14
RC04A05C	01	3.57	2.56
RC04A05C	02	8.20	7.73
RC04A05C	03	11.34	15.16
RC04A05C	04	48.32	52.20
RC04A05C	05	28.57	22.21
Exercise Total Time (seconds)		41	40

5. Tell how much you agree or disagree with each of the following statements.

A. Science helps me to understand how my body works.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

B. Science is not very useful to me outside of science class.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

C. The procedures of science are good only in a laboratory.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

RC04A05-R1S

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC04A06

NAEP #: C04A06-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		07-06	07-06
National P-value:			
RC04A06A	00		.15
RC04A06A	01	60.23	60.03
RC04A06A	02	20.71	27.36
RC04A06A	09	19.06	12.46
RC04A06B	00	.12	.12
RC04A06B	01	83.43	84.16
RC04A06B	02	7.35	10.07
RC04A06B	09	9.10	5.65
RC04A06C	00		.14
RC04A06C	01	47.44	47.87
RC04A06C	02	37.67	42.41
RC04A06C	09	14.89	9.58
RC04A06D	00	.06	.14
RC04A06D	01	41.44	41.99
RC04A06D	02	51.31	50.17
RC04A06D	09	7.19	7.69
RC04A06E	00		.17
RC04A06E	01	60.17	63.55
RC04A06E	02	31.56	31.34
RC04A06E	09	8.27	4.93
Exercise Total Time (seconds)		51	48

6. Science research has produced much information. Do you and your family use this kind of information to:

A. decide what foods to eat? Yes ○ No ○ I don't know ○

B. keep healthy? Yes ○ No ○ I don't know ○

C. decide how many vitamins to take? Yes ○ No ○ I don't know ○

D. choose a toothpaste? Yes ○ No ○ I don't know ○

E. decide whether to smoke cigarettes? Yes ○ No ○ I don't know ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC04A07

NAEP #: C04A07-23

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		07-07	07-07
National P-value:			
RC04A07A	00	.05	.07
RC04A07A	01	12.72	8.98
RC04A07A	02	40.90	34.01
RC04A07A	03	34.00	40.98
RC04A07A	04	12.33	15.97
RC04A07B	00	.05	.19
RC04A07B	01	14.51	8.79
RC04A07B	02	41.20	34.93
RC04A07B	03	32.20	39.19
RC04A07B	04	12.04	16.89
Exercise Total Time (seconds)		29	28

7.

A. Outside of science classes, how often do you solve problems by using scientific methods?

Often	Sometimes	Seldom	Never
○	○	○	○

B. How often do scientific methods you have learned help you plan some parts of your life?

Often	Sometimes	Seldom	Never
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC04A08

NAEP #: C04A08-1

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-14

National P-value:

RC04A08A	00	.31
RC04A08A	01	34.38
RC04A08A	02	60.72
RC04A08A	09	4.59
RC04A08B	00	.25
RC04A08B	01	85.09
RC04A08B	02	12.02
RC04A08B	09	2.6[illegible]
RC04A08C	00	.25
RC04A08C	01	92.50
RC04A08C	02	4.77
RC04A08C	09	2.48
RC04A08D	00	.39
RC04A08D	01	18.76
RC04A08D	02	76.72
RC04A08D	09	4.13

Exercise Total Time (seconds) 77

14. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

		Yes	No	I don't know.
A.	Would you rather be told an answer than have to find out the answer on your own?	○	○	○
B.	When you have an important problem to solve, do you try to think of different ways to solve it?	○	○	○
C.	Do you feel good when you find out something new on your own?	○	○	○
D.	Do you usually like questions that you don't know the answer to?	○	○	○

N-C04A08-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC04A09*

NAEP #: C01U02-1

Content Classification: 0. Affective
Sub-Classification: 4. Personal use of tools and attributes

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-17

National P-value:

RC04A09A*	00	.57
RC04A09A*	01	49.80
RC04A09A*	02	40.07
RC04A09A*	09	9.56
RC04A09B*	00	.49
RC04A09B*	01	90.99
RC04A09B*	02	5.96
RC04A09B*	09	2.56
RC04A09C*	00	1.02
RC04A09C*	01	29.96
RC04A09C*	02	61.55
RC04A09C*	09	7.47
RC04A09D*	00	.79
RC04A09D*	01	52.98
RC04A09D*	02	40.59
RC04A09D*	09	5.64
RC04A09E*	00	.82
RC04A09E*	01	34.14
RC04A09E*	02	59.42
RC04A09E*	09	5.62

Exercise Total Time (seconds) 71

17. For each of the following, tell if you or your family can use information gained from scientific experiments to do these things. Be sure to fill in one oval in each box. Can you or your family use information gained from scientific experiments to

	Yes	No	I don't know.
A. decide what cereal to buy?	○	○	○
B. keep healthy?	○	○	○
C. buy a car?	○	○	○
D. choose a toothpaste?	○	○	○
E. choose friends?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

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Release #:        RC05A01

NAEP #:           C05A01-234

Content Classification:    0. Affective
    Sub-Classification:    5. Confidence in science

Assessed In:              1976-77
Release Status:           Released after 1976-77

Overlap:                                       13        17       Adult
1976-77 Package-Exercise:                    03-14     03-12      02-24

National P-value:
    RC05A01A     00                            .10       .27
    RC05A01A     01                           8.61      4.60
    RC05A01A     02                          59.36     44.73
    RC05A01A     03                          31.92     50.40
    RC05A01B     00                            .23       .26
    RC05A01B     01                           6.27      2.29
    RC05A01B     02                          39.97     27.13
    RC05A01B     03                          53.53     70.32
    RC05A01C     00                            .04       .30
    RC05A01C     01                           3.44       .81
    RC05A01C     02                          26.01     13.93
    RC05A01C     03                          70.50     84.96
    RC05A01D     00                            .04       .28
    RC05A01D     01                          52.69     39.11
    RC05A01D     02                          32.12     44.76
    RC05A01D     03                          15.14     15.85
    RC05A01E     00                            .05       .34
    RC05A01E     01                          57.96     49.49
    RC05A01E     02                          30.87     41.05
    RC05A01E     03                          11.13      9.13
    RC05A01F     00                            .08       .12
    RC05A01F     01                          23.51      8.76
    RC05A01F     02                          53.42     46.66
    RC05A01F     03                          22.99     44.46
    RC05A01G     00                            .06       .16
    RC05A01G     01                           6.03      5.26
    RC05A01G     02                          47.25     47.00
    RC05A01G     03                          46.66     47.58
    RC05A01H     00                            .07       .18
    RC05A01H     01                          10.10      4.97
    RC05A01H     02                          45.44     40.51
    RC05A01H     03                          44.39     54.33
    RC05A01I     00                            .06       .20
    RC05A01I     01                          49.54     26.61
    RC05A01I     02                          39.13     51.62
    RC05A01I     03                          11.27     21.57

Exercise Total Time (seconds)                   95        91         *

 * No paced tape was used in this administration of this exercise.
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14. For each of the following problems tell how much you think the application of science can help solve the problem. Be sure to fill in one oval in each box. How much do you think the application of science can help

		None	Some	Very much
A.	prevent worldwide starvation?	○	○	○
B.	save us from an energy shortage?	○	○	○
C.	find cures for diseases?	○	○	○
D.	control weather?	○	○	○
E.	prevent wars?	○	○	○
F.	prevent birth defects?	○	○	○
G.	save our natural resources?	○	○	○
H.	reduce air and water pollution?	○	○	○
I.	reduce world overpopulation?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC05A02

NAEP #: C05A02-234

Content Classification: 0. Affective
Sub-Classification: 5. Confidence in science

Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17	Adult
Overlap:				
1976-77 Package-Exercise:		01-13	01-10	02-21
National P-value:				
RC05A02A	00	.12	.18	
RC05A02A	01	20.19	21.13	
RC05A02A	02	57.52	63.01	
RC05A02A	03	14.69	13.57	
RC05A02A	08	7.48	2.11	
RC05A02B	00	.13	.26	
RC05A02B	01	1.89	2.98	
RC05A02B	02	21.47	28.04	
RC05A02B	03	39.68	35.95	
RC05A02B	04	21.15	22.82	
RC05A02B	08	15.69	9.94	
RC05A02C	00	.02	.12	
RC05A02C	01	10.87	20.50	
RC05A02C	02	14.81	14.05	
RC05A02C	03	59.93	48.50	
RC05A02C	08	14.37	16.82	
RC05A02D	00		.14	
RC05A02D	01	36.44	36.67	
RC05A02D	02	3.91	4.14	
RC05A02D	03	46.53	51.65	
RC05A02D	04	5.18	3.15	
RC05A02D	08	7.95	4.25	
RC05A02E	00	.09	.15	
RC05A02E	01	7.34	6.53	
RC05A02E	02	39.31	50.42	
RC05A02E	03	39.40	33.38	
RC05A02E	04	6.65	3.28	
RC05A02E	08	7.20	4.25	
RC05A02F	00	.13	.30	
RC05A02F	01	25.96	28.56	
RC05A02F	02	11.27	10.32	
RC05A02F	03	41.71	40.11	
RC05A02F	08	20.92	20.71	
Exercise Total Time (seconds)		148	145	*

* No paced tape was used in this administration of this exercise.

Source: Adapted from surveys conducted by Opinion Research Corporation, Princeton, New Jersey in 1972 and 1974. Reproduced in Science Indicators - 1974, National Science Board (NSB-75-1). U.S. Government Printing Office.

13. Please give your opinion on each of the following questions.

Be sure to fill in one oval in each box.

A. For the most part, do you feel that science and technology will eventually solve most problems such as pollution, disease, drug abuse and crime, some of these problems, or few if any of these problems?

MOST PROBLEMS	SOME OF THESE PROBLEMS	FEW, IF ANY OF THESE PROBLEMS	NO OPINION
○	○	○	○

B. Which of these items best describes your general reaction to science and technology?

FEAR OR ALARM	SATISFACTION OR HOPE	EXCITEMENT OR WONDER	INDIFFERENCE OR LACK OF INTEREST	NO OPINION
○	○	○	○	○

C. Do you feel that science and technology change things too fast, too slowly, or just about right?

TOO FAST	TOO SLOWLY	JUST ABOUT RIGHT	NO OPINION
○	○	○	○

D. Do you feel that science and technology have changed life for the better or for the worse?

BETTER	WORSE	BOTH	NEITHER/NO EFFECT	NO OPINION
○	○	○	○	○

E. Do you feel that science and technology have caused most of our problems, some of our problems, a few of our problems, or none of our problems?

MOST OF OUR PROBLEMS	SOME OF OUR PROBLEMS	FEW OF OUR PROBLEMS	NONE OF OUR PROBLEMS	NO OPINION
○	○	○	○	○

F. Do you feel that the degree of control that society has over science and technology should be increased, decreased, or remain as it is now?

INCREASED	DECREASED	REMAIN AS IT IS	NO OPINION
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC06A01

NAEP #: C06A01-234

Content Classification: 0. Affective
Sub-Classification: 6. Support of research

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 02-12	17 05-10	Adult 02-23
National P-value:				
RC06A01A	00	.02	.01	
RC06A01A	01	74.51	77.53	
RC06A01A	02	19.17	19.15	
RC06A01A	03	4.48	2.35	
RC06A01A	04	1.82	.95	
RC06A01B	00	.09	.01	
RC06A01B	01	39.37	54.77	
RC06A01B	02	30.57	26.97	
RC06A01B	03	16.33	10.53	
RC06A01B	04	13.63	7.72	
RC06A01C	00	.02	.01	
RC06A01C	01	78.47	87.87	
RC06A01C	02	16.16	10.44	
RC06A01C	03	3.25	1.04	
RC06A01C	04	2.10	.64	
RC06A01D	00		.01	
RC06A01D	01	90.39	95.44	
RC06A01D	02	6.48	3.84	
RC06A01D	03	1.78	.44	
RC06A01D	04	1.35	.27	
RC06A01E	00	.03	.01	
RC06A01E	01	64.29	81.72	
RC06A01E	02	27.88	14.76	
RC06A01E	03	5.88	2.51	
RC06A01E	04	1.92	1.00	
RC06A01F	00	.09	.01	
RC06A01F	01	69.31	86.37	
RC06A01F	02	26.24	11.76	
RC06A01F	03	3.56	1.53	
RC06A01F	04	.80	.34	
RC06A01G	00	.02	.11	
RC06A01G	01	20.28	38.66	
RC06A01G	02	49.25	43.71	
RC06A01G	03	24.93	14.81	
RC06A01G	04	5.52	2.72	
RC06A01H	00	.11	.11	
RC06A01H	01	52.74	52.97	
RC06A01H	02	27.99	32.79	
RC06A01H	03	16.38	12.02	
RC06A01H	04	2.79	2.11	
RC06A01I	00	.13	.01	
RC06A01I	01	7.27	11.56	
RC06A01I	02	26.66	34.60	
RC06A01I	03	44.77	38.52	
RC06A01I	04	21.17	15.30	
RC06A01J	00		.01	
RC06A01J	01	56.81	60.69	
RC06A01J	02	33.28	32.82	
RC06A01J	03	6.82	5.34	
RC06A01J	04	3.10	1.14	
RC06A01K	00	.12	.01	
RC06A01K	01	36.86	50.02	
RC06A01K	02	37.62	31.48	
RC06A01K	03	17.11	13.93	
RC06A01K	04	8.29	4.56	
RC06A01L	00	.29	.43	
RC06A01L	01	30.10	47.94	
RC06A01L	02	40.53	35.45	
RC06A01L	03	22.95	12.95	
RC06A01L	04	6.14	3.22	
RC06A01M	00	.29	.01	
RC06A01M	01	22.44	40.82	
RC06A01M	02	38.59	37.20	
RC06A01M	03	24.68	15.84	
RC06A01M	04	14.01	6.14	
RC06A01N	00	.03	.10	
RC06A01N	01	30.92	36.91	
RC06A01N	02	41.35	44.89	
RC06A01N	03	18.92	14.03	
RC06A01N	04	8.78	4.07	
RC06A01O	00	.17	.01	
RC06A01O	01	61.97	78.08	
RC06A01O	02	31.59	19.38	
RC06A01O	03	4.56	2.01	
RC06A01O	04	1.71	.53	
RC06A01P	00	.18	.04	
RC06A01P	01	5.66	6.89	
RC06A01P	02	14.20	19.19	
RC06A01P	03	29.81	35.12	
RC06A01P	04	50.15	38.75	
RC06A01Q	00	.16	.01	
RC06A01Q	01	25.34	43.16	
RC06A01Q	02	44.64	37.73	
RC06A01Q	03	19.23	12.04	
RC06A01Q	04	10.63	7.06	
RC06A01R	00	.09	.01	
RC06A01R	01	34.28	40.93	
RC06A01R	02	45.10	43.02	
RC06A01R	03	15.00	12.40	
RC06A01R	04	5.53	3.64	
RC06A01S	00	.09	.01	
RC06A01S	01	57.43	50.26	
RC06A01S	02	33.05	38.76	
RC06A01S	03	7.15	8.99	
RC06A01S	04	2.28	1.97	
Exercise Total Time (seconds)		195	232	*

* No paced tape was used in this administration of this exercise.

12. Do you think scientists should be given money to study

A. earthquake prediction?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

B. how to make rain fall on farm land?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

C. methods of reducing air pollution?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

D. cures for cancer?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

E. ways to produce more food?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

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12. (Continued)

Do you think scientists should be given money to study

F. ways to solve the energy problem?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

G. ways to maintain a steady and plentiful supply of fish for food?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

H. ways to cure a very rare disease?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

I. how people behave when they live in very crowded cities?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

J. how to develop low pollution, electric transportation systems?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

12. (Continued)

Do you think scientists should be given money to study

K. ways to solve population problems?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

L. how to prevent droughts?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

M. methods of farming the ocean?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

N. ways to control insects?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

O. ways to use solar energy?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

12. (Continued)

Do you think scientists should be given money to study

P. new ways to build smoke stacks?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

Q. methods of birth control?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

R. transportation problems?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

S. fire safety problems?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC06B01

NAEP #: C06B01-234

Content Classification: 0. Affective
Sub-Classification: 6. Support of research

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 02-11	17 05-09	Adult 02-22
National P-value:				
RC06B01A	00	.14	.06	
RC06B01A	01	4.64	2.56	
RC06B01A	02	21.67	13.74	
RC06B01A	03	33.14	42.03	
RC06B01A	04	40.42	41.62	
RC06B01B	00	.67	.01	
RC06B01B	01	34.60	39.16	
RC06B01B	02	58.54	56.78	
RC06B01B	03	5.41	3.68	
RC06B01B	04	.78	.37	
RC06B01C	00	.71	.20	
RC06B01C	01	22.84	21.74	
RC06B01C	02	41.57	45.44	
RC06B01C	03	26.12	22.55	
RC06B01C	04	8.76	10.08	
RC06B01D	00	.74	.02	
RC06B01D	01	37.84	49.27	
RC06B01D	02	43.22	41.30	
RC06B01D	03	13.06	7.60	
RC06B01D	04	5.14	1.81	
RC06B01E	00	.72	.04	
RC06B01E	01	26.49	27.57	
RC06B01E	02	34.77	43.18	
RC06B01E	03	22.64	21.95	
RC06B01E	04	15.37	7.26	
RC06B01F	00	.37	.05	
RC06B01F	01	62.21	74.37	
RC06B01F	02	30.20	22.49	
RC06B01F	03	5.57	2.42	
RC06B01F	04	1.66	.68	
RC06B01G	00	.27	.04	
RC06B01G	01	25.30	21.69	
RC06B01G	02	46.15	46.41	
RC06B01G	03	20.75	25.56	
RC06B01G	04	7.53	6.29	
RC06B01H	00	.37	.07	
RC06B01H	01	28.57	26.11	
RC06B01H	02	44.86	47.49	
RC06B01H	03	21.47	21.96	
RC06B01H	04	4.73	4.36	
RC06B01I	00	.15	.05	
RC06B01I	01	17.01	30.13	
RC06B01I	02	47.08	45.95	
RC06B01I	03	28.46	20.42	
RC06B01I	04	7.30	3.45	
RC06B01J	00	.15	.16	
RC06B01J	01	16.06	20.67	
RC06B01J	02	28.87	35.55	
RC06B01J	03	31.54	27.78	
RC06B01J	04	23.38	15.84	
RC06B01K	00	.21	.01	
RC06B01K	01	31.87	31.00	
RC06B01K	02	47.67	48.42	
RC06B01K	03	16.85	17.49	
RC06B01K	04	3.40	3.09	
RC06B01L	00	.02	.01	
RC06B01L	01	14.24	14.02	
RC06B01L	02	37.80	41.64	
RC06B01L	03	34.36	33.58	
RC06B01L	04	13.59	10.74	
RC06B01M	00	.07	.07	
RC06B01M	01	19.17	15.01	
RC06B01M	02	46.76	50.62	
RC06B01M	03	26.03	30.04	
RC06B01M	04	5.97	4.25	
RC06B01N	00	.12	.01	
RC06B01N	01	14.82	20.52	
RC06B01N	02	43.61	44.95	
RC06B01N	03	31.37	27.92	
RC06B01N	04	10.08	6.60	
RC06B01O	00	.31	.01	
RC06B01O	01	41.98	62.31	
RC06B01O	02	37.69	32.09	
RC06B01O	03	14.87	4.61	
RC06B01O	04	5.15	.98	
RC06B01P	00	.08	.01	
RC06B01P	01	18.62	26.45	
RC06B01P	02	48.60	48.01	
RC06B01P	03	24.60	21.46	
RC06B01P	04	8.10	4.07	
Exercise Total Time (seconds)		179	184	

* No paced tape was used in this administration of this exercise.

. Tell if you think scientists should be given money to study each of the following things. Be sure to fill in one oval in each box. Do you think scientists should be given money to study

A. things which will probably never be useful?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

B. things which may be useful someday?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

C. how the continents move around?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

D. chemicals in sea water?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

E. storms on the surface of the sun?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

11. (Continued)

Do you think scientists should be given money to study

F. efficient, lightweight ways of storing electrical energy?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

G. how animals communicate?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

H. distant stars?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

I. how genes control plant characteristics?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

J. how mice react to drugs at different times of the day?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

11. (Continued)

Do you think scientists should be given money to study

K. small parts of the atom?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

L. how monkeys learn?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

M. how gases condense around crystals?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

N. habits of fish in the ocean?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

O. how X rays change living cells?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

P. how bacteria and green plants live together?

Definitely Yes	Probably Yes	Probably Not	Definitely Not
○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC07A01

NAEP #: C07A01-234

Content Classification: 0. Affective
Sub-Classification: 7. Controversial issues

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17	Adult
1976-77 Package-Exercise:		06-01	06-01	02-25
National P-value:				
RC07A01A	00	.26	.24	
RC07A01A	01	13.43	15.07	
RC07A01A	02	39.67	32.65	
RC07A01A	03	16.89	12.30	
RC07A01A	04	16.48	20.21	
RC07A01A	05	13.26	19.53	
RC07A01B	00	.29	.52	
RC07A01B	01	14.18	11.79	
RC07A01B	02	23.45	15.43	
RC07A01B	03	13.54	9.99	
RC07A01B	04	16.58	13.99	
RC07A01B	05	31.95	48.28	
RC07A01C	00	.67	.39	
RC07A01C	01	12.96	19.49	
RC07A01C	02	25.81	32.45	
RC07A01C	03	23.89	15.14	
RC07A01C	04	18.24	13.70	
RC07A01C	05	18.42	18.83	
RC07A01D	00	.37	.24	
RC07A01D	01	6.03	14.12	
RC07A01D	02	13.87	23.27	
RC07A01D	03	16.88	13.98	
RC07A01D	04	24.46	18.24	
RC07A01D	05	38.38	30.15	
RC07A01E	00	.31	.31	
RC07A01E	01	3.58	7.18	
RC07A01E	02	6.41	10.39	
RC07A01E	03	8.78	10.75	
RC07A01E	04	12.08	10.71	
RC07A01E	05	68.85	60.86	
RC07A01F	00	.28	.33	
RC07A01F	01	18.12	14.52	
RC07A01F	02	25.44	21.17	
RC07A01F	03	15.97	14.25	
RC07A01F	04	13.47	12.89	
RC07A01F	05	26.72	36.84	
RC07A01G	00	.18	.43	
RC07A01G	01	2.52	2.37	
RC07A01G	02	9.13	5.69	
RC07A01G	03	12.47	8.83	
RC07A01G	04	21.19	14.17	
RC07A01G	05	54.50	68.52	
RC07A01H	00	.32	.56	
RC07A01H	01	54.37	54.69	
RC07A01H	02	32.03	31.87	
RC07A01H	03	7.75	6.14	
RC07A01H	04	3.11	3.69	
RC07A01H	05	2.41	3.06	
RC07A01I	00	.22	.39	
RC07A01I	01	10.60	11.28	
RC07A01I	02	19.15	21.47	
RC07A01I	03	18.72	20.00	
RC07A01I	04	23.08	22.28	
RC07A01I	05	28.24	24.58	
RC07A01J	00	.22	.30	
RC07A01J	01	29.50	43.07	
RC07A01J	02	32.85	33.30	
RC07A01J	03	12.78	10.71	
RC07A01J	04	8.72	5.76	
RC07A01J	05	15.94	6.86	
Exercise Total Time (seconds)		131	123	*

* No paced tape was used in this administration of this exercise.

For each one of the things listed on this and the next page, do you think scientists should be allowed to try to do it? Be sure to fill in one oval in each box. Do you think scientists should be allowed to try

A. to make a robot that can think and act like a person?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

B. to make bigger bombs?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

C. to grow baby frogs from test tube beginnings?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

D. to grow baby dogs from test tube beginnings?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

E. to grow human babies from test tube beginnings?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

1. (Continued)

Do you think scientists should be allowed to try

F. to create life?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

G. to grow exact copies of people?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

H. to seek other forms of life in space?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

I. to do any kind of research they want to do?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

J. to make mechanical parts for people?

Definitely Yes	Probably Yes	Not Sure	Probably Not	Definitely Not
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC07A02

NAEP #: C07A02-23

Content Classification: 0. **Affective**
Sub-Classification: 7. Controversial issues

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		06-02	06-02
National P-value:			
RC07A02A	00	.18	.33
RC07A02A	01	.63	.53
RC07A02A	02	2.12	.42
RC07A02A	03	10.44	6.74
RC07A02A	04	11.25	11.37
RC07A02A	05	75.38	80.60
RC07A02B	00	.50	.43
RC07A02B	01	2.69	1.50
RC07A02B	02	3.92	1.41
RC07A02B	03	10.72	5.87
RC07A02B	04	12.65	10.18
RC07A02B	05	69.52	80.60
RC07A02C	00	.15	.26
RC07A02C	01	10.61	7.91
RC07A02C	02	17.55	13.80
RC07A02C	03	45.16	48.11
RC07A02C	04	18.37	20.72
RC07A02C	05	8.16	9.20
RC07A02D	00	.23	.26
RC07A02D	01	4.99	1.13
RC07A02D	02	4.34	1.13
RC07A02D	03	12.85	11.73
RC07A02D	04	14.21	16.33
RC07A02D	05	63.39	69.44
Exercise Total Time (seconds)		43	42

2. How often do you think scientists should be allowed to

A. experiment on people without their approval?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

B. create new diseases for warfare?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

C. work on secret projects?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

D. control the way people act?

Always ○ Often ○ Sometimes ○ Seldom ○ Never ○

8-C07A02-818

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

elease #: RC08A01

AEP #: C08A01-234

ontent Classification: 0. Affective
Sub-Classification: 8. Awareness of methods, assumptions values in science

ssessed In: 1976-77
elease Status: Released after 1976-77

verlap: 976-77 Package-Exercise:		13 01-14	17 01-11	Adult 02-26
ational P-value:				
RC08A01A	00	.27	.29	
RC08A01A	01	10.88	16.03	
RC08A01A	02	57.09	59.96	
RC08A01A	03	25.19	18.44	
RC08A01A	04	5.12	4.85	
RC08A01A	05	1.45	.43	
RC08A01B	00	.27	.28	
RC08A01B	01	2.93	.78	
RC08A01B	02	13.40	6.24	
RC08A01B	03	6.00	5.58	
RC08A01B	04	61.30	65.35	
RC08A01B	05	16.11	21.77	
RC08A01C	00	.65	.36	
RC08A01C	01	17.36	28.18	
RC08A01C	02	55.73	58.33	
RC08A01C	03	19.86	10.72	
RC08A01C	04	5.27	1.96	
RC08A01C	05	1.14	.47	
RC08A01D	00	.36	.29	
RC08A01D	01	6.00	3.30	
RC08A01D	02	29.53	20.90	
RC08A01D	03	16.74	17.51	
RC08A01D	04	36.69	41.50	
RC08A01D	05	10.68	16.51	
RC08A01E	00	.40	.18	
RC08A01E	01	17.42	19.79	
RC08A01E	02	62.27	67.40	
RC08A01E	03	12.04	8.59	
RC08A01E	04	6.06	3.52	
RC08A01E	05	1.82	.51	
xercise Total Time (seconds)		76	75	*

* No paced tape was used in this administration of this exercise.

14. For each of the following statements, choose the one response which best expresses your degree of agreement or disagreement with the statement. Fill in the oval under the response you choose.

A. Unexpected observations have played an important role in increasing scientific knowledge.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

B. Scientists always find answers to their questions.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

C. Observations of natural events are very important sources of scientific information.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

D. Scientists believe that some mysterious events do not have causes.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

E. There may be many different methods of solving a single scientific problem.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

RC08A01-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC08A02

NAEP #: C08A02-23

Content Classification: 0. Affective
Sub-Classification: 8. Awareness of methods, assumptions and values in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		01-15	01-12
National P-value:			
RC08A02A	00	.07	.17
RC08A02A	01	9.23	15.91
RC08A02A	02	59.36	63.71
RC08A02A	03	22.12	13.24
RC08A02A	04	8.08	6.49
RC08A02A	05	1.13	.48
RC08A02B	00	.06	.23
RC08A02B	01	19.41	16.96
RC08A02B	02	59.13	62.84
RC08A02B	03	14.20	14.80
RC08A02B	04	6.49	4.58
RC08A02B	05	.72	.59
RC08A02C	00	.15	.28
RC08A02C	01	9.90	9.61
RC08A02C	02	54.13	68.25
RC08A02C	03	15.43	10.08
RC08A02C	04	17.89	10.41
RC08A02C	05	2.49	1.38
RC08A02D	00	.13	.35
RC08A02D	01	23.09	20.86
RC08A02D	02	58.16	65.30
RC08A02D	03	12.01	9.82
RC08A02D	04	5.34	3.26
RC08A02D	05	1.27	.41
RC08A02E	00	.19	.27
RC08A02E	01	12.63	10.66
RC08A02E	02	46.73	51.20
RC08A02E	03	19.34	19.00
RC08A02E	04	16.69	15.54
RC08A02E	05	4.41	3.32
Exercise Total Time (seconds)		69	70

15. How do you feel about each of these statements about scientific theories?

A. It is likely that some theories which scientists use today will be shown to be inadequate someday.

○ Strongly Agree ○ Agree ○ No Opinion ○ Disagree ○ Strongly Disagree

B. Scientists are interested in improving their explanations of natural events.

○ Strongly Agree ○ Agree ○ No Opinion ○ Disagree ○ Strongly Disagree

C. Theories are useful even though they may be incomplete.

○ Strongly Agree ○ Agree ○ No Opinion ○ Disagree ○ Strongly Disagree

D. Scientific theories are important products of science.

○ Strongly Agree ○ Agree ○ No Opinion ○ Disagree ○ Strongly Disagree

E. One important use of a scientific theory is to predict future events.

○ Strongly Agree ○ Agree ○ No Opinion ○ Disagree ○ Strongly Disagree

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-C08A02-818

Release #: RC08A03

NAEP #: C08A03-234

Content Classification: 0. Affective
Sub-Classification: 8. Awareness of methods, assumptions and values in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 01-16	17 01-13	Adult 02-27
National P-value:				
RC08A03A	00		.33	
RC08A03A	01	40.45	42.99	
RC08A03A	02	47.27	46.95	
RC08A03A	03	5.97	5.20	
RC08A03A	04	5.43	3.92	
RC08A03A	05	.87	.61	
RC08A03B	00	.48	.43	
RC08A03B	01	26.44	12.26	
RC08A03B	02	38.93	20.43	
RC08A03B	03	9.19	12.24	
RC08A03B	04	18.70	38.90	
RC08A03B	05	6.26	15.74	
RC08A03C	00	.06	.42	
RC08A03C	01	6.20	2.43	
RC08A03C	02	20.24	10.88	
RC08A03C	03	12.26	8.17	
RC08A03C	04	46.78	54.44	
RC08A03C	05	14.46	23.67	
RC08A03D	00	.28	.36	
RC08A03D	01	10.36	2.89	
RC08A03D	02	27.73	16.54	
RC08A03D	03	16.91	13.77	
RC08A03D	04	32.45	43.24	
RC08A03D	05	12.26	23.20	
RC08A03E	00	.11	.36	
RC08A03E	01	26.92	38.53	
RC08A03E	02	51.58	50.13	
RC08A03E	03	9.01	6.15	
RC08A03E	04	9.98	4.08	
RC08A03E	05	2.41	.75	
RC08A03F	00	.16	.56	
RC08A03F	01	18.56	20.08	
RC08A03F	02	67.90	70.96	
RC08A03F	03	8.16	5.90	
RC08A03F	04	3.83	2.12	
RC08A03F	05	1.40	.38	
Exercise Total Time (seconds)		85	84	*

* No paced tape was used in this administration of this exercise.

16. How do you feel about each of these statements about scientists?

A. One very important job of a scientist is to report exactly what he observes.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

B. Scientists should not criticize each other's work.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

C. If a researcher accurately reports his experimental results, other researchers should accept the results without question.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

D. Once scientists have developed a good theory, they should stick together to prevent others from saying it is wrong.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

E. Scientists must be willing to change their ideas when new information becomes known.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

F. Different scientists may give different explanations about the same observations.

Strongly Agree	Agree	No Opinion	Disagree	Strongly Disagree
○	○	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC09D01

NAEP #: C09D01-23

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17
Overlap: 1976-77 Package-Exercise:		03-13	03-11
National P-value:			
RC09D01A	00	.10	.15
RC09D01A	01	69.81	77.90
RC09D01A	02	28.51	20.41
RC09D01A	09	1.58	1.55
RC09D01B	00	.13	.17
RC09D01B	01	57.74	70.49
RC09D01B	02	40.13	28.01
RC09D01B	09	2.00	1.32
RC09D01C	00	.10	.20
RC09D01C	01	6.51	6.50
RC09D01C	02	92.05	92.98
RC09D01C	09	1.35	.32
RC09D01D	00	.13	.15
RC09D01D	01	46.44	53.08
RC09D01D	02	48.59	43.93
RC09D01D	09	4.85	2.8[illegible]
RC09D01E	00	.16	.38
RC09D01E	01	70.26	83.81
RC09D01E	02	25.81	14.43
RC09D01E	09	3.77	1.38
RC09D01F	00	.16	.22
RC09D01F	01	52.10	57.83
RC09D01F	02	45.25	40.93
RC09D01F	09	2.48	1.01
RC09D01G	00	.11	.17
RC09D01G	01	83.36	95.43
RC09D01G	02	15.75	4.14
RC09D01G	09	.78	.26
RC09D01H	00	.15	.21
RC09D01H	01	69.89	85.21
RC09D01H	02	28.50	14.07
RC09D01H	09	1.46	.51
RC09D01I	00	.06	.20
RC09D01I	01	66.88	82.77
RC09D01I	02	31.38	16.45
RC09D01I	09	1.68	.58
RC09D01J	00	.10	.20
RC09D01J	01	79.68	81.37
RC09D01J	02	17.61	16.09
RC09D01J	09	2.61	2.34
RC09D01K	00	.09	.16
RC09D01K	01	86.07	83.34
RC09D01K	02	13.09	16.06
RC09D01K	09	.76	.42
RC09D01L	00	.04	.12
RC09D01L	01	58.19	74.36
RC09D01L	02	39.13	24.11
RC09D01L	09	2.64	1.40
RC09D01M	00	.08	.26
RC09D01M	01	78.30	90.97
RC09D01M	02	20.41	8.13
RC09D01M	09	1.21	.65
RC09D01N	00	.02	.24
RC09D01N	01	55.11	60.01
RC09D01N	02	40.16	37.31
RC09D01N	09	4.72	2.44
RC09D01O	00	.02	.19
RC09D01O	01	80.59	80.01
RC09D01O	02	18.82	19.47
RC09D01O	09	.57	.33
RC09D01P	00	.05	.21
RC09D01P	01	83.61	81.87
RC09D01P	02	15.58	17.36
RC09D01P	09	.76	.56
RC09D01Q	00	.13	.20
RC09D01Q	01	93.71	94.48
RC09D01Q	02	5.74	5.03
RC09D01Q	09	.42	.29
RC09D01R	00	.18	.18
RC09D01R	01	81.17	84.72
RC09D01R	02	16.36	14.00
RC09D01R	09	2.29	1.10
RC09D01S	00	.10	.12
RC09D01S	01	25.81	31.94
RC09D01S	02	72.21	66.68
RC09D01S	09	1.88	1.26
RC09D01T	00	.12	.20
RC09D01T	01	39.02	66.67
RC09D01T	02	58.67	32.22
RC09D01T	09	2.19	.92
RC09D01U	00	.10	.17
RC09D01U	01	97.74	97.46
RC09D01U	02	2.06	2.22
RC09D01U	09	.10	.15
Exercise Total Time (seconds)		211	195

3. For each of the things on this and the next page, tell whether or not you have ever done it. Be sure to fill in one oval in each box. Have you ever

		Yes	No	I don't know.
A.	looked at a rock and tried to figure out how it had been formed?	○	○	○
B.	experimented with something for more than a week to see how it changed?	○	○	○
C.	gone on a school sponsored overnight trip to an outdoor lab?	○	○	○
D.	made a piece of science equipment?	○	○	○
E.	figured out the volume of an object?	○	○	○
F.	wired together an electrical circuit?	○	○	○
G.	focused a microscope by yourself?	○	○	○
H.	taken your temperature by yourself?	○	○	○
I.	taken your pulse by yourself?	○	○	○
J.	made something out of junk?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

13. (Continued)

Have you ever

		Yes	No	I don't know.
K.	collected leaves or flowers or insects?	○	○	○
L.	used a microscope to look at things growing in water?	○	○	○
M.	looked at anything alive under a microscope?	○	○	○
N.	found a fossil?	○	○	○
O.	touched a snake or lizard?	○	○	○
P.	taken care of an aquarium or fish bowl?	○	○	○
Q.	grown a plant?	○	○	○
R.	taken something apart to see how it works?	○	○	○
S.	made a magnet using electricity and wire?	○	○	○
T.	made a microscope slide?	○	○	○
U.	taken care of an animal?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC09D02

NAEP #: C09D02-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 01-13

National P-value:

RC09D02A	00	.26
RC09D02A	01	53.53
RC09D02A	02	42.55
RC09D02A	09	3.65
RC09D02B	00	.37
RC09D02B	01	48.78
RC09D02B	02	45.69
RC09D02B	09	5.16
RC09D02C	00	.40
RC09D02C	01	38.04
RC09D02C	02	59.36
RC09D02C	09	2.20
RC09D02D	00	.31
RC09D02D	01	27.93
RC09D02D	02	67.55
RC09D02D	09	4.20
RC09D02E	00	.22
RC09D02E	01	82.52
RC09D02E	02	15.50
RC09D02E	09	1.75
RC09D02F	00	.24
RC09D02F	01	59.88
RC09D02F	02	38.07
RC09D02F	09	1.81
RC09D02G	00	.42
RC09D02G	01	71.24
RC09D02G	02	26.30
RC09D02G	09	2.04
RC09D02H	00	.08
RC09D02H	01	70.78
RC09D02H	02	25.68
RC09D02H	09	3.46

Exercise Total Time (seconds) 136

13. For each part of the exercise below, the answer choices are "Yes," "No," or "I don't know." For this kind of exercise, you should fill in the oval under the answer you choose. Be sure to fill in one oval in each box.

For each of the following things, tell if you have ever done it. Have you ever

		Yes	No	I don't know.
A.	looked at a rock and tried to figure out how it had been formed?	○	○	○
B.	experimented with something for more than a week to see how it changed?	○	○	○
C.	taken your temperature by yourself?	○	○	○
D.	taken your pulse by yourself?	○	○	○
E.	collected leaves or flowers or insects?	○	○	○
F.	touched a snake or lizard?	○	○	○
G.	taken care of an aquarium or fish bowl?	○	○	○
H.	taken something apart to see how it works?	○	○	○

⓪ ① ② ③ ④ ⑤ ⑥ ⑦ ⑧ ⑨

8-C09D02-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09D03

NAEP #: C09D03-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 01-14

National P-value:

RC09D03A	00	.08
RC09D03A	01	72.57
RC09D03A	02	23.29
RC09D03A	09	4.07
RC09D03B	00	.22
RC09D03B	01	68.59
RC09D03B	02	27.11
RC09D03B	09	4.08
RC09D03C	00	.14
RC09D03C	01	56.63
RC09D03C	02	39.78
RC09D03C	09	3.45
RC09D03D	00	.17
RC09D03D	01	48.91
RC09D03D	02	45.35
RC09D03D	09	5.58
RC09D03E	00	.23
RC09D03E	01	81.42
RC09D03E	02	16.31
RC09D03E	09	2.04
RC09D03F	00	.32
RC09D03F	01	56.82
RC09D03F	02	40.69
RC09D03F	09	2.17
RC09D03G	00	.16
RC09D03G	01	80.28
RC09D03G	02	17.32
RC09D03G	09	2.25
RC09D03H	00	.12
RC09D03H	01	76.17
RC09D03H	02	20.41
RC09D03H	09	3.29

Exercise Total Time (seconds) 123

14. For each of the following things, tell if you would like to do it. Be sure to fill in one oval in each box. Would you like to

		Yes	No	I don't know.
A.	look at a rock and try to figure out how it had been formed?	○	○	○
B.	experiment with something for more than a week to see how it changed?	○	○	○
C.	take your temperature by yourself?	○	○	○
D.	take your pulse by yourself?	○	○	○
E.	collect leaves or flowers or insects?	○	○	○
F.	touch a snake or lizard?	○	○	○
G.	take care of an aquarium or fish bowl?	○	○	○
H.	take something apart to see how it works?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09S01

NAEP #: C09S01-23

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise:

National P-value:

		13 10-13	17 10-13
RC09S01A	00	.09	.20
RC09S01A	01	69.25	81.28
RC09S01A	02	27.01	14.85
RC09S01A	09	3.65	3.67
RC09S01B	00	.04	.28
RC09S01B	01	53.49	56.08
RC09S01B	02	45.40	42.14
RC09S01B	09	1.07	1.50
RC09S01C	00	.14	.22
RC09S01C	01	60.35	62.44
RC09S01C	02	37.99	36.01
RC09S01C	09	1.52	1.33
RC09S01D	00	.14	.24
RC09S01D	01	90.67	92.68
RC09S01D	02	8.63	6.14
RC09S01D	09	.56	.94
RC09S01E	00	.05	.28
RC09S01E	01	87.62	93.18
RC09S01E	02	11.23	5.18
RC09S01E	09	1.10	1.36
RC09S01F	00	.05	.22
RC09S01F	01	77.45	81.11
RC09S01F	02	19.33	16.19
RC09S01F	09	3.16	2.48
RC09S01G	00	.05	.22
RC09S01G	01	58.85	73.50
RC09S01G	02	25.19	10.09
RC09S01G	09	15.91	16.19
RC09S01H	00	.02	.18
RC09S01H	01	48.42	56.85
RC09S01H	02	50.19	40.90
RC09S01H	09	1.37	2.07
RC09S01I	00	.05	.17
RC09S01I	01	83.80	87.68
RC09S01I	02	14.62	10.69
RC09S01I	09	1.53	1.47
RC09S01J	00	.19	.30
RC09S01J	01	63.77	78.75
RC09S01J	02	29.72	16.54
RC09S01J	09	6.32	4.41
RC09S01K	00	.02	.19
RC09S01K	01	74.92	70.97
RC09S01K	02	20.42	23.23
RC09S01K	09	4.64	5.61
RC09S01L	00	.02	.27
RC09S01L	01	13.51	19.89
RC09S01L	02	73.53	67.24
RC09S01L	09	12.93	12.60
RC09S01M	00	.05	.21
RC09S01M	01	84.29	90.00
RC09S01M	02	11.06	6.57
RC09S01M	09	4.60	3.22
Exercise Total Time (seconds)		109	99

3. For each of the things on this and the next page, tell whether or not you have ever seen it (not on TV, but for real). Have you ever seen

	Yes	No	I don't know.
A. a sprouting seed?	○	○	○
B. an egg hatching?	○	○	○
C. an animal being born?	○	○	○
D. a fish eating?	○	○	○
E. ants or bees working?	○	○	○
F. birds caring for their young?	○	○	○
G. the North Star?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

13. (Continued)

Have you ever seen

	Yes	No	I don't know.
H. the moon through a telescope?	○	○	○
I. an animal skeleton?	○	○	○
J. an eclipse of the moon or the sun?	○	○	○
K. a weather map?	○	○	○
L. a solar heat collector?	○	○	○
M. a fossil?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09S02

NAEP #: C09S02-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 07-13

National P-value:

RC09S02A	00	.46
RC09S02A	01	56.98
RC09S02A	02	39.30
RC09S02A	09	3.26
RC09S02B	00	.57
RC09S02B	01	43.71
RC09S02B	02	54.12
RC09S02B	09	1.61
RC09S02C	00	.84
RC09S02C	01	48.92
RC09S02C	02	48.19
RC09S02C	09	2.05
RC09S02D	00	.53
RC09S02D	01	80.81
RC09S02D	02	17.13
RC09S02D	09	1.54
RC09S02E	00	.57
RC09S02E	01	72.86
RC09S02E	02	23.64
RC09S02E	09	2.94
RC09S02F	00	.88
RC09S02F	01	63.42
RC09S02F	02	31.87
RC09S02F	09	3.83
RC09S02G	00	1.11
RC09S02G	01	42.61
RC09S02G	02	41.55
RC09S02G	09	14.73
RC09S02H	00	.76
RC09S02H	01	34.48
RC09S02H	02	61.25
RC09S02H	09	3.51
RC09S02I	00	.48
RC09S02I	01	61.94
RC09S02I	02	34.49
RC09S02I	09	3.09
RC09S02J	00	.56
RC09S02J	01	53.16
RC09S02J	02	32.47
RC09S02J	09	13.81

Exercise Total Time (seconds) 126

13. For each of the following things, tell if you have ever seen it, not on TV or in a book, but for real. Be sure to fill in one oval in each box.

Have you ever seen

A.	a sprouting seed?	Yes ○	No ○	I don't know. ○
B.	an egg hatching?	Yes ○	No ○	I don't know. ○
C.	an animal being born?	Yes ○	No ○	I don't know. ○
D.	a fish eating?	Yes ○	No ○	I don't know. ○
E.	ants or bees working?	Yes ○	No ○	I don't know. ○
F.	birds caring for their young?	Yes ○	No ○	I don't know. ○
G.	the North Star?	Yes ○	No ○	I don't know. ○
H.	the moon through a telescope?	Yes ○	No ○	I don't know. ○
I.	an animal skeleton?	Yes ○	No ○	I don't know. ○
J.	a fossil?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC09S03

NAEP #: C09S03-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 07-14

National P-value:

RC09S03A	00	.24
RC09S03A	01	79.20
RC09S03A	02	17.10
RC09S03A	09	3.46
RC09S03B	00	.56
RC09S03B	01	86.35
RC09S03B	02	11.33
RC09S03B	09	1.76
RC09S03C	00	.56
RC09S03C	01	78.19
RC09S03C	02	17.55
RC09S03C	09	3.70
RC09S03D	00	.43
RC09S03D	01	69.85
RC09S03D	02	24.85
RC09S03D	09	4.88
RC09S03E	00	.55
RC09S03E	01	66.87
RC09S03E	02	28.57
RC09S03E	09	4.02
RC09S03F	00	.24
RC09S03F	01	84.06
RC09S03F	02	12.29
RC09S03F	09	3.41
RC09S03G	00	.40
RC09S03G	01	81.86
RC09S03G	02	12.63
RC09S03G	09	5.11
RC09S03H	00	.37
RC09S03H	01	84.15
RC09S03H	02	12.24
RC09S03H	09	3.24
RC09S03I	00	.37
RC09S03I	01	59.18
RC09S03I	02	36.06
RC09S03I	09	4.39
RC09S03J	00	.33
RC09S03J	01	69.44
RC09S03J	02	21.19
RC09S03J	09	9.05

Exercise Total Time (seconds) 124

14. For each of the following things, tell if you would like to see it, not on TV or in a book, but for real. Be sure to fill in one oval in each box.

Would you like to see

		Yes	No	I don't know.
A.	a sprouting seed?	○	○	○
B.	an egg hatching?	○	○	○
C.	an animal being born?	○	○	○
D.	a fish eating?	○	○	○
E.	ants or bees working?	○	○	○
F.	birds caring for their young?	○	○	○
G.	the North Star?	○	○	○
H.	the moon through a telescope?	○	○	○
I.	an animal skeleton?	○	○	○
J.	a fossil?	○	○	○

○ 0
○ 1
○ 2
○ 3
○ 4
○ 5
○ 6
○ 7
○ 8
○ 9

S-C09S03-81S

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09U01

NAEP #: C09U01-23

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 1976-77 Package-Exercise:		13 01-17	17 01-14
National P-value:			
RC09U01A	00	.17	.19
RC09U01A	01	70.17	78.79
RC09U01A	02	23.98	18.83
RC09U01A	09	5.68	2.19
RC09U01B	00	.15	.10
RC09U01B	01	96.88	99.10
RC09U01B	02	2.47	.66
RC09U01B	09	.50	.14
RC09U01C	00	.09	.12
RC09U01C	01	96.95	98.46
RC09U01C	02	2.55	1.09
RC09U01C	09	.41	.33
RC09U01D	00	.04	.15
RC09U01D	01	64.74	76.84
RC09U01D	02	34.22	21.95
RC09U01D	09	1.01	1.06
RC09U01E	00	.15	.25
RC09U01E	01	96.14	98.67
RC09U01E	02	3.45	.92
RC09U01E	09	.25	.15
RC09U01F	00	.09	.10
RC09U01F	01	94.77	97.75
RC09U01F	02	4.35	1.81
RC09U01F	09	.80	.35
RC09U01G	00	.01	.10
RC09U01G	01	89.41	97.83
RC09U01G	02	9.44	1.78
RC09U01G	09	1.13	.30
RC09U01H	00	.03	.19
RC09U01H	01	76.78	89.17
RC09U01H	02	21.27	10.03
RC09U01H	09	1.93	.61
RC09U01I	00	.22	.17
RC09U01I	01	25.50	48.51
RC09U01I	02	59.87	44.55
RC09U01I	09	14.41	6.77
RC09U01J	00	.01	.11
RC09U01J	01	97.21	98.83
RC09U01J	02	2.43	.87
RC09U01J	09	.35	.18
RC09U01K	00	.25	.56
RC09U01K	01	23.96	36.22
RC09U01K	02	72.62	61.37
RC09U01K	09	3.17	1.85
RC09U01L	00	.07	.25
RC09U01L	01	42.54	56.86
RC09U01L	02	48.52	39.51
RC09U01L	09	8.86	3.38
RC09U01M	00	.21	.32
RC09U01M	01	4.80	10.86
RC09U01M	02	92.10	87.32
RC09U01M	09	2.89	1.51
RC09U01N	00	.20	.28
RC09U01N	01	31.70	63.61
RC09U01N	02	55.22	29.68
RC09U01N	09	12.88	6.43
RC09U01O	00	.16	.51
RC09U01O	01	21.62	36.84
RC09U01O	02	74.25	58.80
RC09U01O	09	3.97	3.86
RC09U01P	00	.18	.10
RC09U01P	01	98.78	99.37
RC09U01P	02	.82	.39
RC09U01P	09	.22	.15
RC09U01Q	00	.07	.19
RC09U01Q	01	98.81	99.24
RC09U01Q	02	.92	.36
RC09U01Q	09	.20	.21
Exercise Total Time (seconds)		155	142

7. For each of the things on this and the next page, tell whether or not you have ever used it yourself. Be sure to fill in one oval in each box. Have you ever used

	Yes	No	I don't know.
A. a meter stick?	○	○	○
B. a scale to weigh things?	○	○	○
C. a magnifying glass?	○	○	○
D. a telescope?	○	○	○
E. a camera?	○	○	○
F. a thermometer?	○	○	○
G. a microscope?	○	○	○
H. a stopwatch?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

17. (Continued)

Have you ever used

	Yes	No	I don't know.
I. a barometer?	○	○	○
J. a calculator?	○	○	○
K. a computer?	○	○	○
L. a stethoscope?	○	○	○
M. a pollution detection kit?	○	○	○
N. a graduated cylinder?	○	○	○
O. a meter that measures electricity?	○	○	○
P. a yard stick?	○	○	○
Q. a measuring cup?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09U02

NAEP #: C09U02-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-15

Exercise Total Time (seconds) 123

National P-value:

RC09U02A	00	.27
RC09U02A	01	41.56
RC09U02A	02	49.50
RC09U02A	09	8.67
RC09U02B	00	.44
RC09U02B	01	88.47
RC09U02B	02	8.89
RC09U02B	09	2.21
RC09U02C	00	.31
RC09U02C	01	86.55
RC09U02C	02	10.68
RC09U02C	09	2.46
RC09U02D	00	.86
RC09U02D	01	43.47
RC09U02D	02	52.43
RC09U02D	09	3.25
RC09U02E	00	.58
RC09U02E	01	83.20
RC09U02E	02	13.66
RC09U02E	09	2.57
RC09U02F	00	.69
RC09U02F	01	52.39
RC09U02F	02	42.65
RC09U02F	09	4.27
RC09U02G	00	.38
RC09U02G	01	61.07
RC09U02G	02	32.75
RC09U02G	09	5.80
RC09U02H	00	.44
RC09U02H	01	43.68
RC09U02H	02	48.91
RC09U02H	09	6.97
RC09U02I	00	.33
RC09U02I	01	85.41
RC09U02I	02	12.21
RC09U02I	09	2.05
RC09U02J	00	.25
RC09U02J	01	86.71
RC09U02J	02	11.12
RC09U02J	09	1.91
RC09U02K	00	.23
RC09U02K	01	37.62
RC09U02K	02	43.55
RC09U02K	09	18.60

15. For each of the following things, tell if you have ever used it yourself. Be sure to fill in one oval in each box. Have you ever used

		Yes	No	I don't know.
A.	a meter stick?	○	○	○
B.	a scale to weigh things?	○	○	○
C.	a magnifying glass?	○	○	○
D.	a telescope?	○	○	○
E.	a thermometer?	○	○	○
F.	a microscope?	○	○	○
G.	a compass that shows direction?	○	○	○
H.	a stopwatch?	○	○	○
I.	a yardstick?	○	○	○
J.	a calculator?	○	○	○
K.	a balance?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC09U03

NAEP #: C09U03-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-16

Exercise Total Time (seconds) 128

National P-value:

RC09U03A	00	.06
RC09U03A	01	69.28
RC09U03A	02	22.17
RC09U03A	09	8.49
RC09U03B	00	.15
RC09U03B	01	87.78
RC09U03B	02	9.50
RC09U03B	09	2.57
RC09U03C	00	.35
RC09U03C	01	88.15
RC09U03C	02	9.01
RC09U03C	09	2.50
RC09U03D	00	.36
RC09U03D	01	85.27
RC09U03D	02	10.93
RC09U03D	09	3.44
RC09U03E	00	.42
RC09U03E	01	64.63
RC09U03E	02	31.16
RC09U03E	09	3.79
RC09U03F	00	.60
RC09U03F	01	85.43
RC09U03F	02	10.68
RC09U03F	09	3.29
RC09U03G	00	.30
RC09U03G	01	78.03
RC09U03G	02	15.58
RC09U03G	09	6.09
RC09U03H	00	.20
RC09U03H	01	73.55
RC09U03H	02	20.01
RC09U03H	09	6.24
RC09U03I	00	.22
RC09U03I	01	62.09
RC09U03I	02	32.37
RC09U03I	09	5.32
RC09U03J	00	.10
RC09U03J	01	91.38
RC09U03J	02	6.53
RC09U03J	09	2.00
RC09U03K	00	.09
RC09U03K	01	52.36
RC09U03K	02	29.65
RC09U03K	09	17.91

16. For each of the following things, tell if you like to use it or if you would like to use it. Be sure to fill in one oval in each box. Do you like to or would you like to use

A. a meter stick?	Yes ○	No ○	I don't know. ○
B. a scale to weigh things?	Yes ○	No ○	I don't know. ○
C. a magnifying glass?	Yes ○	No ○	I don't know. ○
D. a telescope?	Yes ○	No ○	I don't know. ○
E. a thermometer?	Yes ○	No ○	I don't know. ○
F. a microscope?	Yes ○	No ○	I don't know. ○
G. a compass that shows direction?	Yes ○	No ○	I don't know. ○
H. a stopwatch?	Yes ○	No ○	I don't know. ○
I. a yardstick?	Yes ○	No ○	I don't know. ○
J. a calculator?	Yes ○	No ○	I don't know. ○
K. a balance?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC09V01

NAEP #: C09V01-23

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		06-03	06-03
National P-value:			
RC09V01A	00	.03	.29
RC09V01A	01	94.32	96.63
RC09V01A	02	5.12	2.78
RC09V01A	09	.54	.29
RC09V01B	00	.01	.32
RC09V01B	01	88.74	93.11
RC09V01B	02	10.42	6.34
RC09V01B	09	.84	.23
RC09V01C	00	.01	.29
RC09V01C	01	98.06	99.08
RC09V01C	02	1.41	.52
RC09V01C	09	.52	.10
RC09V01D	00	.10	.34
RC09V01D	01	19.77	33.36
RC09V01D	02	76.06	64.85
RC09V01D	09	4.07	1.46
RC09V01E	00	.01	.29
RC09V01E	01	85.92	92.11
RC09V01E	02	10.56	6.56
RC09V01E	09	3.52	1.03
RC09V01F	00	.01	.33
RC09V01F	01	90.22	94.10
RC09V01F	02	7.54	5.14
RC09V01F	09	2.23	.43
RC09V01G	00	.03	.29
RC09V01G	01	93.26	95.54
RC09V01G	02	5.60	3.58
RC09V01G	09	1.10	.58
RC09V01H	00	.08	.36
RC09V01H	01	55.30	66.66
RC09V01H	02	29.25	25.41
RC09V01H	09	15.37	7.56
RC09V01I	00	.03	.29
RC09V01I	01	98.82	99.07
RC09V01I	02	.98	.52
RC09V01I	09	.18	.12
RC09V01J	00	.07	.29
RC09V01J	01	70.44	80.57
RC09V01J	02	25.83	17.75
RC09V01J	09	3.66	1.38
RC09V01K	00	.01	.29
RC09V01K	01	91.36	96.48
RC09V01K	02	6.00	2.97
RC09V01K	09	2.63	.26
RC09V01L	00	.06	.29
RC09V01L	01	41.03	61.47
RC09V01L	02	51.29	35.31
RC09V01L	09	7.63	2.92
RC09V01M	00	.01	.34
RC09V01M	01	92.74	96.51
RC09V01M	02	5.94	2.63
RC09V01M	09	1.31	.51
RC09V01N	00	.01	.29
RC09V01N	01	65.48	74.01
RC09V01N	02	31.57	24.92
RC09V01N	09	2.95	.77
RC09V01O	00	.03	.33
RC09V01O	01	92.65	94.52
RC09V01O	02	6.49	5.04
RC09V01O	09	.83	.11
RC09V01P	00	.03	.32
RC09V01P	01	26.70	40.34
RC09V01P	02	62.01	50.93
RC09V01P	09	11.26	8.41
RC09V01Q	00	.01	.28
RC09V01Q	01	16.75	25.84
RC09V01Q	02	77.68	71.10
RC09V01Q	09	5.56	2.78
RC09V01R	00	.01	.28
RC09V01R	01	42.08	56.75
RC09V01R	02	52.72	40.75
RC09V01R	09	5.19	2.23
RC09V01S	00	.09	.28
RC09V01S	01	22.27	24.30
RC09V01S	02	72.13	72.93
RC09V01S	09	5.51	2.49
RC09V01T	00	.04	.23
RC09V01T	01	19.06	31.89
RC09V01T	02	74.21	64.64
RC09V01T	09	6.69	3.23
RC09V01U	00	.04	.21
RC09V01U	01	79.84	86.00
RC09V01U	02	16.18	12.25
RC09V01U	09	3.94	1.53
RC09V01V	00	.01	.37
RC09V01V	01	51.24	59.52
RC09V01V	02	45.16	39.41
RC09V01V	09	3.59	.69
RC09V01W	00	.01	.21
RC09V01W	01	99.35	99.52
RC09V01W	02	.48	.22
RC09V01W	09	.16	.04
RC09V01X	00	.01	.21
RC09V01X	01	97.95	98.73
RC09V01X	02	1.70	1.03
RC09V01X	09	.35	.02
Exercise Total Time (seconds)		195	175

3. For each of the places on this and the next two pages, tell whether or not you have ever visited it. Be sure to fill in one oval in each box. Have you ever visited

A. a zoo?	Yes ○	No ○	I don't know. ○
B. a beach?	Yes ○	No ○	I don't know. ○
C. a pond or lake?	Yes ○	No ○	I don't know. ○
D. a desert?	Yes ○	No ○	I don't know. ○
E. a forest?	Yes ○	No ○	I don't know. ○
F. a farm?	Yes ○	No ○	I don't know. ○
G. a museum?	Yes ○	No ○	I don't know. ○
H. a planetarium?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

3. (Continued)

Have you ever visited

I. a park?	Yes ○	No ○	I don't know. ○
J. a mountain?	Yes ○	No ○	I don't know. ○
K. a large city?	Yes ○	No ○	I don't know. ○
L. a skyscraper?	Yes ○	No ○	I don't know. ○
M. a river?	Yes ○	No ○	I don't know. ○
N. an ocean?	Yes ○	No ○	I don't know. ○
O. an airport?	Yes ○	No ○	I don't know. ○
P. a plant that generates electricity?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

3. (Continued)

Have you ever visited

Q.	a sewage treatment plant?	Yes ○	No ○	I don't know. ○
R.	a rock quarry or a mine?	Yes ○	No ○	I don't know. ○
S.	a weather station?	Yes ○	No ○	I don't know. ○
T.	a laboratory where scientific research is done?	Yes ○	No ○	I don't know. ○
U.	a factory?	Yes ○	No ○	I don't know. ○
V.	a T.V. or radio station?	Yes ○	No ○	I don't know. ○
W.	a doctor's office?	Yes ○	No ○	I don't know. ○
X.	a hospital?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

[illegible]

Release #: RC09V02

NAEP #: C09V02-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-03

National P-value:

RC09V02A	00	.06
RC09V02A	01	87.37
RC09V02A	02	11.87
RC09V02A	09	.70
RC09V02B	00	.26
RC09V02B	01	70.75
RC09V02B	02	25.17
RC09V02B	09	3.82
RC09V02C	00	.30
RC09V02C	01	32.32
RC09V02C	02	48.21
RC09V02C	09	19.17
RC09V02D	00	.19
RC09V02D	01	14.08
RC09V02D	02	72.68
RC09V02D	09	13.05
RC09V02E	00	.05
RC09V02E	01	10.31
RC09V02E	02	74.85
RC09V02E	09	14.79
RC09V02F	00	.10
RC09V02F	01	20.93
RC09V02F	02	70.67
RC09V02F	09	8.30

Exercise Total Time (seconds) 82

3. For each of the following places, tell if you have ever visited it. Be sure to fill in one oval in each box. Have you ever visited

		Yes	No	I don't know.
A.	a zoo?	○	○	○
B.	a museum?	○	○	○
C.	a planetarium?	○	○	○
D.	a plant that generates electricity?	○	○	○
E.	a sewage treatment plant?	○	○	○
F.	a weather station?	○	○	○

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC09V03

NAEP #: C09V03-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-04

National P-value:

RC09V03A	00	.08
RC09V03A	01	89.84
RC09V03A	02	7.51
RC09V03A	09	2.57
RC09V03B	00	.15
RC09V03B	01	92.44
RC09V03B	02	4.92
RC09V03B	09	2.48
RC09V03C	00	.19
RC09V03C	01	71.20
RC09V03C	02	15.73
RC09V03C	09	12.88
RC09V03D	00	.04
RC09V03D	01	71.35
RC09V03D	02	18.38
RC09V03D	09	10.23
RC09V03E	00	.11
RC09V03E	01	39.72
RC09V03E	02	45.05
RC09V03E	09	15.12
RC09V03F	00	.02
RC09V03F	01	84.87
RC09V03F	02	8.89
RC09V03F	09	6.22

Exercise Total Time (seconds) 80

4. For each of the following places, tell if you would like to visit it. Be sure to fill in one oval in each box. Would you like to visit

A. a zoo?	Yes ○	No ○	I don't know. ○
B. a museum?	Yes ○	No ○	I don't know. ○
C. a planetarium?	Yes ○	No ○	I don't know. ○
D. a plant that generates electricity?	Yes ○	No ○	I don't know. ○
E. a sewage treatment plant?	Yes ○	No ○	I don't know. ○
F. a weather station?	Yes ○	No ○	I don't know. ○

S-C09V03-8/S

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09X01

NAEP #: C09X01-23

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		09-17	09-15
National P-value:			
RC09X01A	00	.13	.21
RC09X01A	01	77.92	88.41
RC09X01A	02	20.04	10.71
RC09X01A	09	1.91	.68
RC09X01B	00	.02	.25
RC09X01B	01	77.79	86.06
RC09X01B	02	19.27	12.22
RC09X01B	09	2.92	1.47
RC09X01C	00	.15	.22
RC09X01C	01	43.66	53.97
RC09X01C	02	50.55	40.63
RC09X01C	09	5.64	5.17
RC09X01D	00	.19	.15
RC09X01D	01	78.06	85.04
RC09X01D	02	19.23	13.35
RC09X01D	09	2.52	1.46
RC09X01E	00	.04	.13
RC09X01E	01	55.52	70.33
RC09X01E	02	40.61	26.75
RC09X01E	09	3.84	2.79
RC09X01F	00	.10	.35
RC09X01F	01	43.59	58.03
RC09X01F	02	49.14	36.36
RC09X01F	09	7.18	5.27
RC09X01G	00	.12	.12
RC09X01G	01	48.40	54.42
RC09X01G	02	47.34	43.15
RC09X01G	09	4.15	2.32
RC09X01H	00	.13	.17
RC09X01H	01	49.27	64.01
RC09X01H	02	43.90	30.98
RC09X01H	09	6.69	4.84
RC09X01I	00	.06	.20
RC09X01I	01	62.03	68.62
RC09X01I	02	32.60	28.01
RC09X01I	09	5.31	3.16
RC09X01J	00	.10	.20
RC09X01J	01	63.45	75.92
RC09X01J	02	30.61	20.55
RC09X01J	09	5.84	3.33
RC09X01K	00	.34	.20
RC09X01K	01	23.49	23.85
RC09X01K	02	67.09	67.05
RC09X01K	09	9.08	8.90
RC09X01L	00	.18	.30
RC09X01L	01	34.14	42.92
RC09X01L	02	52.10	49.37
RC09X01L	09	13.57	7.41
RC09X01M	00	.23	.16
RC09X01M	01	59.87	78.87
RC09X01M	02	33.89	18.34
RC09X01M	09	6.01	2.62
RC09X01N	00	.06	.14
RC09X01N	01	32.18	44.18
RC09X01N	02	59.79	48.58
RC09X01N	09	7.97	7.11
RC09X01O	00	.04	.15
RC09X01O	01	47.27	52.77
RC09X01O	02	44.48	42.42
RC09X01O	09	8.21	4.67
Exercise Total Time (seconds)		117	115

17. For each of the following items on this and the next page, tell whether or not you have done experiments or activities with it. Be sure to fill in one oval in each box. Have you worked with or experimented with

A. seeds?	Yes ○	No ○	I don't know. ○
B. magnets?	Yes ○	No ○	I don't know. ○
C. mirrors?	Yes ○	No ○	I don't know. ○
D. living plants?	Yes ○	No ○	I don't know. ○
E. electricity?	Yes ○	No ○	I don't know. ○
F. lenses?	Yes ○	No ○	I don't know. ○
G. living animals?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

17. (Continued)

Have you worked with or experimented with

H. sunshine?	Yes ○	No ○	I don't know. ○
I. sound?	Yes ○	No ○	I don't know. ○
J. heat?	Yes ○	No ○	I don't know. ○
K. solar energy?	Yes ○	No ○	I don't know. ○
L. erosion?	Yes ○	No ○	I don't know. ○
M. chemical reactions?	Yes ○	No ○	I don't know. ○
N. waves?	Yes ○	No ○	I don't know. ○
O. human behavior?	Yes ○	No ○	I don't know. ○

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC09X02

NAEP #: C09X02-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-18

National P-value:

RC09X02A	00	.53
RC09X02A	01	41.63
RC09X02A	02	54.50
RC09X02A	09	3.34
RC09X02B	00	.36
RC09X02B	01	70.02
RC09X02B	02	26.44
RC09X02B	09	3.18
RC09X02C	00	.87
RC09X02C	01	54.59
RC09X02C	02	41.47
RC09X02C	09	3.08
RC09X02D	00	.59
RC09X02D	01	51.02
RC09X02D	02	43.30
RC09X02D	09	5.09
RC09X02E	00	.62
RC09X02E	01	68.86
RC09X02E	02	25.46
RC09X02E	09	5.05

Exercise Total Time (seconds) 69

18. For each of the following things, tell if you have ever done experiments or activities with it. Be sure to fill in one oval in each box. Have you ever worked with or experimented with

		Yes	No	I don't know.
A.	shadows?	○	○	○
B.	living plants?	○	○	○
C.	living animals?	○	○	○
D.	batteries and bulbs?	○	○	○
E.	dissolving things in water?	○	○	○

- S-C09X02-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC09X03

NAEP #: C09X03-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-19

National P-value:

RC09X03A	00	.59
RC09X03A	01	57.61
RC09X03A	02	38.44
RC09X03A	09	3.36
RC09X03B	00	.57
RC09X03B	01	78.33
RC09X03B	02	18.54
RC09X03B	09	2.56
RC09X03C	00	.72
RC09X03C	01	78.26
RC09X03C	02	18.10
RC09X03C	09	2.9[illegible]
RC09X03D	00	.44
RC09X03D	01	56.28
RC09X03D	02	38.75
RC09X03D	09	4.53
RC09X03E	00	.55
RC09X03E	01	69.88
RC09X03E	02	24.51
RC09X03E	09	5.06

Exercise Total Time (seconds) 68

19. For each of the following things, tell if you like to or would you like to do experiments or activities with it. Be sure to fill in one oval in each box.

Do you like to or would you like to work with or experiment with

		Yes	No	I don't know.
A.	shadows?	○	○	○
B.	living plants?	○	○	○
C.	living animals?	○	○	○
D.	batteries and bulbs?	○	○	○
E.	dissolving things in water?	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC09X04

NAEP #: C09X04-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 06-03

National P-value:

RC09X04A	00	.07
RC09X04A	01	56.05
RC09X04A	02	39.82
RC09X04A	09	4.06
RC09X04B	00	.11
RC09X04B	01	54.70
RC09X04B	02	41.18
RC09X04B	09	4.01
RC09X04C	00	.05
RC09X04C	01	32.24
RC09X04C	02	61.65
RC09X04C	09	6.06
RC09X04D	00	.13
RC09X04D	01	60.57
RC09X04D	02	32.75
RC09X04D	09	6.55
RC09X04E	00	.09
RC09X04E	01	48.07
RC09X04E	02	42.38
RC09X04E	09	9.46

Exercise Total Time (seconds) 68

3. For each of the following things, tell if you have ever done experiments or activities with it. Be sure to fill in one oval in each box. Have you ever worked with or experimented with

	Yes	No	I don't know.
A. seeds?	○	○	○
B. magnets?	○	○	○
C. mirrors?	○	○	○
D. sounds?	○	○	○
E. floating and sinking objects?	○	○	○

8-C09X04-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

PART B

RELEASED COGNITIVE EXERCISES FROM THE 1976-77 ASSESSMENT:

Sample Documentation and Exercise

SAMPLE DOCUMENTATION PAGE

① **Release #:** RC12C02

② **NAEP #:** C12C02-23

③ **Content Classification:** 1. Biology
Sub-Classification: 2. Cell theory

④ **Taxonomic Level:** Knowledge
⑤ **Assessed In:** 1976-77
⑥ **Release Status:** Released after 1976-77

⑦ **Overlap:**
⑧ **1976-77 Package-Exercise:**

	13	17
⑧ 1976-77 Package-Exercise:	10-22	10-22
⑨ National P-value: ⓐ RC12C02 ⓑ 03 ⓒ	38.51	53.01
⑩ Exercise Total Time (seconds)	22	20

EXPLANATION OF EXERCISE DOCUMENTATION

1. 1976-77 Release Number: See Sections 1 and 3 of the Introduction.
2. NAEP Number (C12C02) and Age-Overlap Indicator (-23): NAEP reference number and age groups assessed (1 is age 9, 2 is age 13, 3 is age 17 and 4 is adults).
3. Content Classifications: See Section 3, Exhibits 3 and 4.
4. Taxonomic Level: Condensed version of Bloom's Taxonomy of Educational Objectives, Cognitive Domain. See Section 3.
5. Assessed In: First assessed in 1976-77.
6. Release Status: Released for public use after the 1976-77 assessment.
7. Overlap: Age groups assessed with this exercise in 1976-77.
8. 1976-77 Package-Exercise: Location of this exercise in assessment packages.
9. National P-Value: One line for each exercise part. Each line has (a) result number to identify the part, (b) a key to identify the correct response choice and (c) the national percentage of respondents making that choice in 1976-77.
10. Exercise Total Time: Number of seconds allowed on paced audio tape to read and respond to this exercise.
11. NAEP number with subject area indicator (8- is science) and assessment indicator (-818). See Section 1.

SAMPLE EXERCISE

22. When a cell of a plant stem divides, each new cell has

○ half the number of chromosomes as the parent cell.

○ twice the number of chromosomes as the parent cell.

○ the same number of chromosomes as the parent cell.

○ I don't know.

⑪
[illegible]

Release #: RC09X05

NAEP #: C09X05-1

Content Classification: 0. Affective
Sub-Classification: 9. Experiences in science

Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 06-04

National P-value:

RC09X05A	00	.09
RC09X05A	01	80.09
RC09X05A	02	15.49
RC09X05A	09	4.33
RC09X05B	00	.18
RC09X05B	01	79.84
RC09X05B	02	14.18
RC09X05B	09	5.79
RC09X05C	00	.15
RC09X05C	01	58.69
RC09X05C	02	32.01
RC09X05C	09	9.14
RC09X05D	00	.10
RC09X05D	01	65.82
RC09X05D	02	26.44
RC09X05D	09	7.64
RC09X05E	00	.05
RC09X05E	01	72.28
RC09X05E	02	18.75
RC09X05E	09	8.92

Exercise Total Time (seconds) 71

4. For each of the following things, tell if you like to or would you like to do experiments or activities with it. Be sure to fill in one oval in each box. Do you like to or would you like to work with or experiment with

	Yes	No	I don't know.
A. seeds?	○	○	○
B. magnets?	○	○	○
C. mirrors?	○	○	○
D. sounds?	○	○	○
E. floating and sinking objects?	○	○	○

8-C09X05-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: BC11C04

NAEP #: C11C04-1

Content Classification: 1. Biology
Sub-Classification: 1. Systematics

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 01-15

National P-value:

BC11C04A	02	86.96
BC11C04B	01	91.71
BC11C04C	02	58.26
BC11C04D	01	80.63
BC11C04E	02	75.72
BC11C04F	02	60.55

Exercise Total Time (seconds) 104

15. Is each of the following living or nonliving? Be sure to fill in one oval in each box.

A. Rocks	Living ○	Nonliving ●	I don't know. ○
B. Trees	Living ●	Nonliving ○	I don't know. ○
C. Clouds	Living ○	Nonliving ●	I don't know. ○
D. Mushrooms	Living ●	Nonliving ○	I don't know. ○
E. Fire	Living ○	Nonliving ●	I don't know. ○
F. Rivers	Living ○	Nonliving ●	I don't know. ○

B-C11C04-61B

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: BC11C08

NAEP #: C11C08-34

Content Classification: 1. Biology
Sub-Classification: 1. Systematics

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

	17	Adult
Overlap:		
1976-77 Package-Exercise:	08-17	02-32
National P-value:		
BC11C08 02	17.05	
Exercise Total Time (seconds)	34	*

* No paced tape was used in this administration of this exercise.

17. In common biological classification systems, which one of the following pairs is most closely related?

○ Birds and bats
● People and pigs
○ Spiders and grasshoppers
○ Fish and whales
○ Fish and starfish

○ I don't know.

B-C11C08-81B

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC12C02

NAEP #: C12C02-23

Content Classification: 1. Biology
Sub-Classification: 2. Cell theory

Taxonomic Level: Knowledge
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	10-22	10-22
National P-value:		
RC12C02 03	38.51	53.01
Exercise Total Time (seconds)	22	20

22. When a cell of a plant stem divides, each new cell has

○ half the number of chromosomes as the parent cell.

○ twice the number of chromosomes as the parent cell.

● the same number of chromosomes as the parent cell.

○ I don't know.

R-C12C02-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC13C09

NAEP #: C13C09-1

Content Classification: 1. Biology
Sub-Classification: 3. Energy transformation

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 04-11

National P-value:
RC13C09 01 86.99

Exercise Total Time (seconds) 37

11. Laura had two bean plants. She put Plant 1 by a window. She put Plant 2 in a corner of a dark closet. She gave both plants the same amount of food and water for several months. Which plant grew better?

● Plant 1 by the window

○ Plant 2 in the dark closet

○ They both grew the same.

○ I don't know.

8-C13C09-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC14C01

NAEP #: C14C01-23

Content Classification: 1. Biology
Sub-Classification: 4. Heredity

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	06-15	06-15
National P-value:		
RC14C01 02	32.83	68.70
Exercise Total Time (seconds)	43	42

15. Here is a diagram showing the genes for fur color in guinea pigs.

	Male	Female
Parents:	EE	ee
	Brown fur	White fur

	Female	Female	Male	Male
Offspring:	Ee	Ee	Ee	Ee
	Brown fur	Brown fur	Brown fur	Brown fur

According to the diagram, what kind of trait is brown fur in guinea pigs?

○ Recessive

● Dominant

○ Blended inheritance

○ Sex-linked

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: BC15C06

NAEP #: C15C06-3

Content Classification: 1. Biology
Sub-Classification: 5. Systems

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 02-11

National P-value:
BC15C06 01 38.16

Exercise Total Time (seconds) 53

11. A monkey and a frog are sitting on the edge of a cliff when each is unexpectedly touched lightly on its back. The frog jumps off the cliff, while the monkey remains at the edge of the cliff. Which one of the following best explains why the animals reacted differently when touched?

● The monkey has a more complex brain.

○ The frog has a better sense of balance.

○ The monkey is more likely to get hurt from a fall over the cliff than the frog.

○ The frog's reflexes work better.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC15C08*

NAEP #: C19C12-1

Content Classification: 1. Biology
Sub-Classification: 5. Systems

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-19

National P-value:

RC15C08A*	01	88.43
RC15C08B*	04	45.22
RC15C08C*	02	35.32

Exercise Total Time (seconds) 78

19. Choose the plant part (roots, leaves, stems or flowers) which best answers each of the questions below. Fill in one oval in each box.

A. What part holds the plant in the soil?

Roots ● Leaves ○ Stems ○ Flowers ○ I don't know. ○

B. What part produces seeds?

Roots ○ Leaves ○ Stems ○ Flowers ● I don't know. ○

C. What part takes in sunlight and makes food for the plants?

Roots ○ Leaves ● Stems ○ Flowers ○ I don't know. ○

8-C19C12-81A

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC16C01

NAEP #: C16C01-12

Content Classification: 1. Biology
Sub-Classification: 6. Evolution

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	04-22	05-25
National P-value:		
RC16C01 02	53.18	80.37
Exercise Total Time (seconds)	45	27

22. No human being has ever seen a dinosaur. What is the best evidence that dinosaurs once lived?

○ Pictures in museums
● Fossils
○ Pictures on the walls of caves
○ Present animals that have evolved from them

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC16C03

NAEP #: C16C03-23

Content Classification: 1. Biology
Sub-Classification: 6. Evolution

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	03-24	03-22
National P-value:		
RC16C03 02	25.40	51.84
Exercise Total Time (seconds)	34	32

24. A meadow has about 100 weeds growing in it. It has had about the same number of weeds in it for the last 10 years. This year these weeds produced about 1,000,000 seeds. How many weeds will the meadow probably have next year?

○ None
● About 100
○ About 1,000
○ About 1,000,000

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC17C02

NAEP #: C17C02-123

Content Classification: 1. Biology
Sub-Classification: 7. Ecology

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		9	13	17
1976-77 Package-Exercise:		04-07	07-08	07-08
National P-value:				
RC17C02A	01	40.94	58.60	70.34
RC17C02B	02	31.63	40.61	45.39
RC17C02C	01	26.38	32.85	43.05
RC17C02D	01	61.93	81.04	88.46
RC17C02E	02	36.14	42.69	45.69
RC17C02F	01	80.43	93.08	96.61
Exercise Total Time (seconds)		180	52	52

7. Is each of the following part of a sea-turtle's environment?

	Yes	No	I don't know.
A. Sunlight	●	○	○
B. The sea-turtle's age	○	●	○
C. Wind	●	○	○
D. Other sea-turtles	●	○	○
E. The sea-turtle's weight	○	●	○
F. Water	●	○	○

RC17C02-S1S

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: S-C17C07

NAEP #: C17C07-1

Content Classification: 1. Biology
Sub-Classification: 7. Ecology
Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 01-27

National P-value:
S-C17C07 03 49.01

Exercise Total Time (seconds) 48

27. If you put too much fish food in an aquarium, the fish may die because

○ the fish would eat too much.

○ the fish would kill each other fighting for the food.

● the uneaten food would decay and use up the oxygen in the water.

○ I don't know.

8-C17C07-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC18C02

NAEP #: C18C02-23

Content Classification: 1. Biology
Sub-Classification: 8. Behavior

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	10-29	10-29
National P-value:		
RC18C02 01	14.53	19.97
Exercise Total Time (seconds)	41	37

29. Chickens, wolves and baboons all form social groups in which some animals become leaders and others become followers. What is the principal advantage of this "pecking order" where some animals are dominant over others?

● Stress and fighting in the population are reduced.

○ Only the strongest survive.

○ While fighting for a place in the order, the animals gain experience in self-defense.

○ A male's offspring inherits his father's position and doesn't have to fight for his place.

○ I don't know.

8-C18C02-810

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC19C08

NAEP #: C19C08-1

Content Classification: 1. Biology
Sub-Classification: 9. Growth and development

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 07-28

National P-value:
RC19C08 04 43.79

Exercise Total Time (seconds) 34

28. A baby chick grows inside an egg for 21 days before it hatches. Where does the baby chick get its food before it hatches?

○ It is fed by the mother hen.
○ It doesn't need any food.
○ It makes its own food.
● The food is stored in the egg.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC21C01

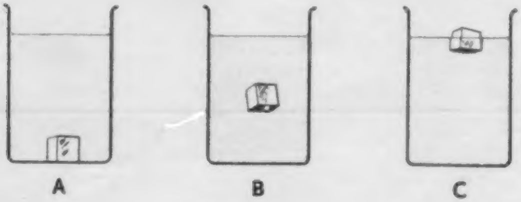
NAEP #: C21C01-23

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	06-11	06-11
National P-value:		
RC21C01 03	36.09	52.02
Exercise Total Time (seconds)	39	38

11. Identical plastic cubes are placed in 3 containers, each containing a different liquid, A, B, or C.



Which one of the materials is the most dense?

○ Liquid A
○ Liquid B
● Liquid C
○ The plastic cube

○ I don't know.

RC21C01-51N

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC21C02

NAEP #: C21C02-2

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

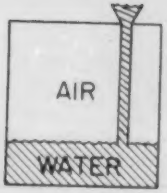
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 02-22

National P-value:
RC21C02 03 69.70

Exercise Total Time (seconds) 34

22.



No more water will go into the can. Why?

○ Air pushes harder than the water.

○ Air is heavier than the water.

● Air takes up space and must get out to let the water in.

○ The water doesn't want to go in.

○ I don't know.

RC21C02-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC21C11

NAEP #: C21C11-1

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

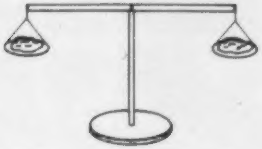
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-16

National P-value:
RC21C11 01 68.50

Exercise Total Time (seconds) 49

6. Joan placed two equal lumps of clay on a balance scale as shown below.

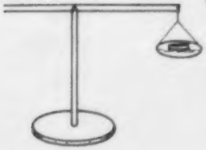


Then she shaped one piece of clay like this: ▭

She broke the other piece into four pieces like this: ∘∘∘∘

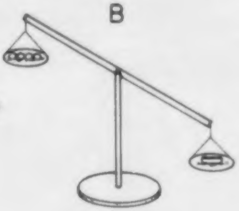
Fill in the oval under the picture which best shows what the balance scale looked like when Joan put the clay back on the balance scale.

A



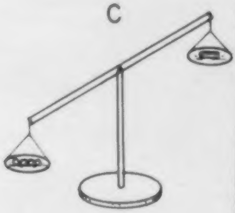
●

B



○

C



○

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

RC21C11-R1R

Release #: RC21C14

NAEP #: C21C14-3

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 05-22

National P-value:
RC21C14 03 25.43

Exercise Total Time (seconds) 37

22. All of the following except one are made up of atoms. Which one of the following is not made up of atoms?

○ Molecules
○ Air
● Heat
○ People
○ Gasoline
○ Sodium chloride

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC21C19*

NAEP #: C23C16-1

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-23

National P-value:

RC21C19A*	02	36.60
RC21C19B*	02	61.22
RC21C19C*	01	89.63
RC21C19D*	01	65.56
RC21C19E*	02	68.43

Exercise Total Time (seconds) 68

23. Is each of the following an example of melting?

		Yes	No	I don't know.
A.	Stirring some sugar in water until you cannot see the sugar	○	●	○
B.	Heating a pan of water until the water is all gone	○	●	○
C.	Heating a block of ice until the ice turns to water	●	○	○
D.	Heating lead until the lead becomes a liquid	●	○	○
E.	Cooling water in the freezer until the water becomes solid	○	●	○

RC23C16-81X

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC22C03

NAEP #: C22C03-23

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations
Content Classification: 7. Science and self

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		07-11	07-11
National P-value:			
RC22C03A	01	54.73	64.28
RC22C03B	01	37.85	60.05
RC22C03C	02	94.48	95.79
RC22C03D	02	46.15	46.53
RC22C03E	01	73.88	72.36
Exercise Total Time (seconds)		49	46

11. Will each of the following help keep an iron nail from rusting?

	Yes	No	I don't know.
A. Coating it with oil	●	○	○
B. Painting it	●	○	○
C. Wrapping it in a wet towel	○	●	○
D. Dipping it in vinegar	○	●	○
E. Putting it in a dry place	●	○	○

R-C22C03-81B

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC22C08

NAEP #: C22C08-1

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-37

National P-value:
RC22C08 01 55.59

Exercise Total Time (seconds) 29

37. How could you dissolve sugar fastest?

● Mix sugar with hot tea

○ Mix sugar with iced tea

○ Mix sugar with iced tea and put the glass in the refrigerator

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC22C11

NAEP #: C22C11-3

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

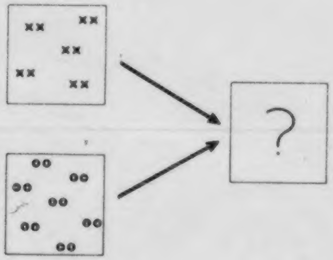
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise: 17 / 08-22

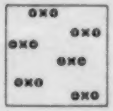
National P-value:
RC22C11 03 39.84

Exercise Total Time (seconds) 39

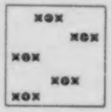
22. A gas with a molecular structure XX is mixed with another gas having a molecular structure OO, as shown in the diagram below.



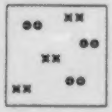
Which one of the following diagrams best represents a mixture of the two gases? Fill in the oval beside the diagram you choose.

○ 

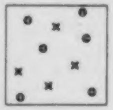
A

○ 

B

● 

C

○ 

D

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC23C03

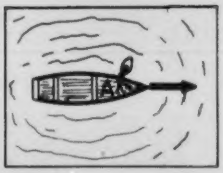
NAEP #: C23C03-23

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	01-26	01-23
National P-value:		
RC23C03 03	69.28	83.01
Exercise Total Time (seconds)	44	42

26.



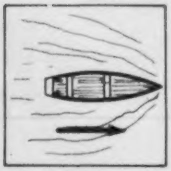
In the picture above, a man (A) dives from the boat in the direction of the arrow. If the boat was not moving before he dived, what direction would the boat move after he dived? On the next page, fill in the oval beside the statement or picture you choose.

PLEASE CONTINUE ON THE NEXT PAGE

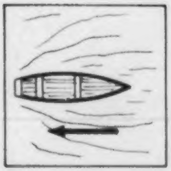
26. (Continued)

○ The boat would not move.

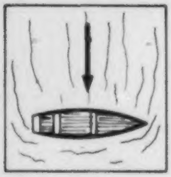
A ○



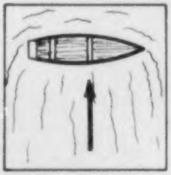
B ○



C ●



D ○



○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC23C09

NAEP #: C23C09-2

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13
1976-77 Package-Exercise:	08-22

National P-value:

RC23C09	02	33.92

Exercise Total Time (seconds)	30

22. **Where does the energy in the explosion of a firecracker come from?**

○ New energy is created when black powder explodes.

● The chemical energy in the powder is converted into heat, light and sound.

○ The air around the firecracker provides the sudden energy.

○ All the energy comes from the match that lights the firecracker.

○ I don't know.

RC23C09-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC23C23

NAEP #: C23C23-1

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-06

National P-value:

RC23C23A	02	84.33
RC23C23B	01	67.59

Exercise Total Time (seconds) 57

6. Sally wants to see where she can slide the best. She runs the same speed each time she tries to slide.

		Yes	No	I don't know.
A.	Can Sally slide more on dry grass than she can on wet grass?	○	●	○
B.	Can Sally slide more on a sidewalk sprinkled with loose sand than she can on a sidewalk with no sand?	●	○	○

RC23C23-818
A

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC23C32

NAEP #: C23C32-3

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 02-27

National P-value:
RC23C32 04 48.77

Exercise Total Time (seconds) 39

27. A piece of hot iron is put into some cold water in an insulated container. What information given below is not needed to determine how much heat the water gained?

- ○ Mass of water
- ○ Change in temperature of the water
- ○ Specific heat of the water
- ● Density of the water

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC23C33

NAEP #: C23C33-3

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise: 17 / 08-30

National P-value:
RC23C33 04 35.15

Exercise Total Time (seconds) 49

30. Experiments have supported Einstein's theory that a clock runs slower when it is traveling at a higher speed. This effect

○ happens only to mechanical clocks.

○ happens only under highly controlled laboratory conditions.

○ must be due to a measurement error, because perfectly accurate clocks run at the same speed everywhere.

● could result in astronauts aging less while in space flight than if they had stayed on earth.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC24C02

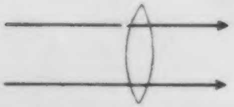
NAEP #: C24C02-23

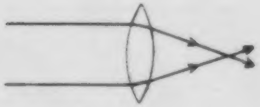
Content Classification: 2. Physical science
Sub-Classification: 4. Waves

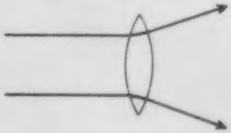
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

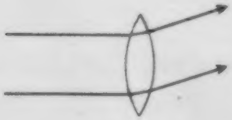
	13	17
Overlap:		
1976-77 Package-Exercise:	01-27	01-24
National P-value:		
RC24C02 02	33.63	59.49
Exercise Total Time (seconds)	36	30

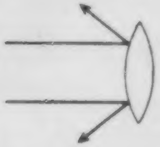
27. **Fill in the oval beside the diagram which best shows what happens when light hits a camera lens.**

○ 

● 

○ 

○ 

○ 

○ **I don't know.**

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

RC24C02-01B

Release #: BC24C06

NAEP #: C24C06-1

Content Classification: 2. Physical science
Sub-Classification: 4. Waves
Content Classification: 7. Science and self

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 04-04

National P-value:

BC24C06A	01	75.21
BC24C06B	01	79.12
BC24C06C	01	49.25
BC24C06D	02	60.62

Exercise Total Time (seconds) 109

4. If you spend a lot of time listening to very loud sounds, could each of these things happen to you? Fill in one oval in each box.

		Yes	No	I don't know.
A.	You might not be able to hear as well anymore.	●	○	○
B.	Inside parts of your ears might be damaged.	●	○	○
C.	It might affect the way you feel.	●	○	○
D.	Your health might improve.	○	●	○

BC24C06-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC25C01

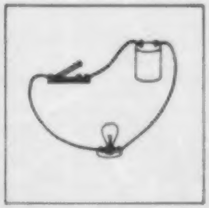
NAEP #: C25C01-12

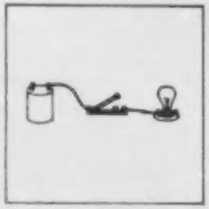
Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	03-36	02-24
National P-value:		
RC25C01 01	50.08	67.05
Exercise Total Time (seconds)	39	33

36. Look at the four pictures below. Each shows a battery, a bulb and a switch. Which bulb will light when the switch is closed? Fill in the oval beside the picture you choose.

● 
A

○ 
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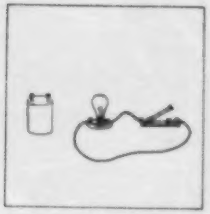
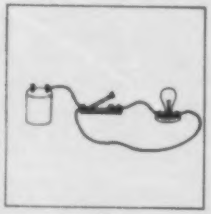
○ 
C

○ 
D

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: BC25C03

NAEP #: C25C03-23

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: **1976-77 Package-Exercise:**	13 10-27	17 10-27
National P-value: BC25C03 04	44.34	59.77
Exercise Total Time (seconds)	26	25

27. The bulb in your two-battery flashlight burned out. Each battery is one and one-half volts. What voltage light bulb should you buy as a replacement?

○ Three-fourths volt

○ One and one-half volts

○ Two volts

● Three volts

○ Six volts

○ I don't know.

B-C25C03-81R

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC25C12

NAEP #: C25C12-1

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism
Content Classification: 7. Science and self

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	9
1976-77 Package-Exercise:	03-21

National P-value:

RC25C12A	01	88.30
RC25C12B	02	30.06
RC25C12C	01	95.60
RC25C12D	02	67.63

Exercise Total Time (seconds) 76

21. If it is not used carefully, electricity can sometimes hurt people. Which of the following things could be dangerous? Be sure to fill in one oval in each box.

	Dangerous	Not Dangerous	I don't know.
A. Flying a kite where it can get tangled in electric wires	●	○	○
B. Leaving an electric lamp turned on for longer than five hours	○	●	○
C. Touching an electric cord where the covering is torn	●	○	○
D. Carrying flashlight batteries in your pocket	○	●	○

8-C25C12-018

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC25C16

NAEP #: C25C16-3

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 02-05

National P-value:

RC25C16A	02	67.38
RC25C16B	02	32.80
RC25C16C	01	37.15
RC25C16D	02	27.79

Exercise Total Time (seconds) 54

5. When there is a steady, direct current in a wire, are the following statements true or false?

	True	False	I don't know.
A. Charges pile up in the wire.	○	●	○
B. A steady electric field appears around the wire.	○	●	○
C. A steady magnetic field appears around the wire.	●	○	○
D. An electromagnetic wave radiates away from the wire.	○	●	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC31C01

NAEP #: C31C01-23

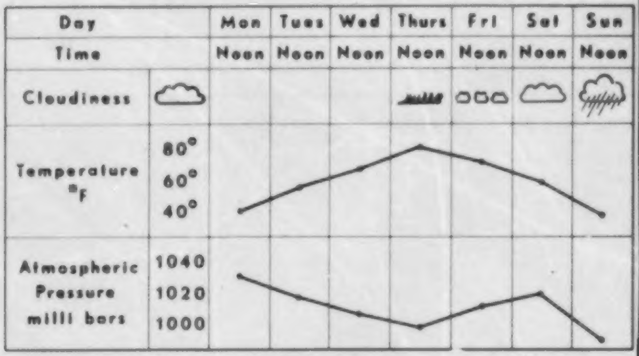
Content Classification: 3. Earth science
Sub-Classification: 1. Meterology
Content Classification: 5. Process of inquiry
Sub-Classification: 8. Interpretation of data

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		06-18	06-18
National P-value:			
RC31C01A	03	50.58	59.10
RC31C01B	04	62.28	82.48
Exercise Total Time (seconds)		92	89

18. Look at the information in the diagram below and answer the questions on this and the following page.

WEATHER DATA FOR SUN CITY



A. Which one of the following conditions might have predicted rain on Sunday?

○ The pressure was dropping, and the temperature was rising.
○ The pressure was rising, and the temperature was dropping.
● The pressure was dropping, and the temperature was dropping.
○ The pressure was rising, and the temperature was rising.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

18. (Continued)

B. Look at the diagram for the days **Monday through Thursday**. Choose the best description of the relationship between **temperature and pressure** for those days.

- ○ As the temperature rose, the pressure **remained the same.**
- ○ As the pressure rose, the temperature **remained the same.**
- ○ As the pressure rose, the temperature **dropped.**
- ● As the temperature rose, the pressure **dropped.**

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC31C07

NAEP #: C31C07-1

Content Classification: 3. Earth science
Sub-Classification: 1. Meterology
Content Classification: 2. Physical science
Sub-Classification: 1. Matter

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 04-18

National P-value:
RC31C07 02 53.89

Exercise Total Time (seconds) 38

18. A wet sponge was put into an empty plastic bucket. A few hours later, the sponge and bucket were dry. What probably happened to the water in the sponge?

- ○ The water was soaked up by the plastic bucket.
- ● The water in the sponge became a gas and went into the air.
- ○ All of the water was still in the sponge, but you just couldn't see it or feel it.
- ○ No one knows what happened to the water when it disappeared.

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

```
Release #:        RC32C04

NAEP #:           C32C04-23

Content Classification:    3. Earth science
    Sub-Classification:    2. Geology

Taxonomic Level:         Comprehension
Assessed In:             1976-77
Release Status:          Released after 1976-77

Overlap:                                         13        17
1976-77 Package-Exercise:                      07-14     07-14

National P-value:
    RC32C04A     02                            76.88     76.58
    RC32C04B     02                            86.25     86.21
    RC32C04C     01                            72.83     79.62
    RC32C04D     02                            86.82     85.45
    RC32C04E     01                            51.94     52.03
    RC32C04F     02                            59.73     56.40

Exercise Total Time (seconds)                     50        49
```

14. Is each of the following presently helping to shape the surface of the moon?

		Yes	No	I don't know.
A.	Glaciers	○	●	○
B.	Plants	○	●	○
C.	Meteorites	●	○	○
D.	Streams	○	●	○
E.	Solar radiation	●	○	○
F.	Moving air	○	●	○

R-C32C04-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC32C11

NAEP #: C32C11-3

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 11-15

National P-value:
RC32C11 03 50.07

Exercise Total Time (seconds) 63

15. Which statement best describes how the earth's surface changes over billions of years?

- ○ A flat surface is gradually pushed up into steeper and steeper mountains until the world is covered with mountains.
- ○ Very steep mountains gradually wear down until most of the world is worn down to sea level.
- ● Very steep mountains gradually wear down into flat surfaces that may be again pushed up into mountains, and so on over and over again.
- ○ Very steep mountains and flat plains stay side by side for billions of years with little change.

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC33C01

NAEP #: C33C01-234

Content Classification: 3. Earth science
Sub-Classification: 3. Oceanography
Content Classification: 1. Biology
Sub-Classification: 7. Ecology
Content Classification: 6. Persistent societal problems
Sub-Classification: 3. Growth and resource management

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

	13	17	Adult
Overlap: 1976-77 Package-Exercise:	06-17	06-17	02-34
National P-value: RC33C01 02	17.99	19.66	
Exercise Total Time (seconds)	42	41	*

* No paced tape was used in this administration of this exercise.

17. Estuaries are areas along coastlines in which salty ocean water mixes with fresh river water. Which one of the following statements about ocean life in these areas is correct?

○ There is very little animal life, but much plant life.

● These are major breeding areas for many kinds of ocean life.

○ Many tiny animals grow there, but the water is not deep enough for big animals.

○ There is little ocean life there because it is too salty for fresh water fish and not salty enough for ocean fish.

○ I don't know.

R-C33C01-R1R

STOP DO NOT CONTINUE UNTIL TOLD TO DO

Release #: RC34C04

NAEP #: C34C04-23

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: **1976-77 Package-Exercise:**	13 10-23	17 10-23
National P-value: RC34C04 02	50.01	64.64
Exercise Total Time (seconds)	33	32

23. Which one of the following best explains why telescopes used for studying the stars are often built on mountain tops?

○ To get as close as possible to the stars

● To get above layers of smog, dust and fog

○ To make sure that the powerful telescopes can be placed on a firm platform

○ To get away from the noise of large cities

○ I don't know.

○
○
○
○
○
○
○
○
○
○

RC34C04-81A

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC34C06

NAEP #: C34C06-123

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

		9	13	17
Overlap. 1976-77 Package-Exercise:		02-28	05-24	05-25
National P-value:				
RC34C06	05	32.88	45.48	50.06
Exercise Total Time (seconds)		19	13	19

28. A star is most like

○ a comet.
○ a meteor.
○ the moon.
○ a planet.
● the sun.

○ I don't know.

R-C34C06-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

elease #: RC34C10

AEP #: C34C10-1

ontent Classification: 3. Earth science
Sub-Classification: 4. Astronomy

axonomic Level: Comprehension
ssessed In: 1976-77
elease Status: Released after 1976-77

verlap: 9
976-77 Package-Exercise: 04-13

ational P-value:
RC34C10 02 60.64

xercise Total Time (seconds) 54

13. Which one of the following sentences is true?

○ In the winter there are more hours of sunlight each day than in the summer.

● In the summer there are more hours of sunlight each day than in the winter.

○ There are the same number of hours of sunlight each day in the summer as there are in the winter.

○ Some summer days have fewer hours of sunlight than winter days, and other summer days have more hours of sunlight than winter days.

○ I don't know.

8-C34C10-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

```
[illegible]                BC44C01

[illegible]                C44C01-23

Content Classification:     4. Integrated topics
    Sub-Classification:     4. Evolution
Content Classification:     3. Earth science
    Sub-Classification:     4. Astronomy

Taxonomic Level:         Comprehension
Assessed In:             1976-77
Release Status:          Released after 1976-77

Overlap:                                           13         17
1976-77 Package-Exercise:                        06-19      06-19

National P-value:
    BC44C01        04                            30.94      50.63

Exercise Total Time (seconds)                       31         31
```

19. Astronomers sometimes talk about the evolution of a star. When they do this, the astronomers are probably talking about the star's

○ brightness.

○ motion in the skies.

○ position in the galaxy.

● gradual change.

○ turning speed.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC46C01

NAEP #: C46C01-23

Content Classification: 4. Integrated topics
Sub-Classification: 6. Time/space

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	07-10	07-10
National P-value:		
RC46C01 03	58.20	70.51
Exercise Total Time (seconds)	28	27

10. Life span, erosion, tides, seasons, city growth, automobile production, electrical use, plant growth, and epidemics can all be measured in terms of

○ weight.
○ length.
● time.
○ mass.
○ force.

○ I don't know.

K-C46C01-81S

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC47C02*

NAEP #: C43C02-3

Content Classification: 4. Integrated topics
Sub-Classification: 7. Systems

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		17
1976-77 Package-Exercise:		11-03
National P-value:		
RC47C02A*	01	70.77
RC47C02B*	01	56.69
RC47C02C*	01	83.43
RC47C02D*	01	79.82
RC47C02E*	01	58.66
RC47C02F*	01	71.83
RC47C02G*	01	80.95
Exercise Total Time (seconds)		75

3. Can each of the items below be thought of as a system?

	Yes	No	I don't know.
A. Street	●	○	○
B. Toaster	●	○	○
C. Automobile	●	○	○
D. Farm	●	○	○
E. House	●	○	○
F. Person	●	○	○
G. Football team	●	○	○

N-C43C02-818

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC53C01

NAEP #: C53C01-23

Content Classification: 5. Process of inquiry
Sub-Classification: 3. Communications

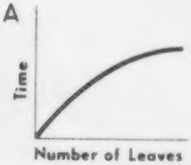
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

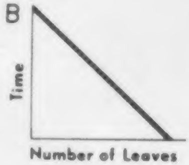
	13	17
Overlap: 1976-77 Package-Exercise:	08-15	11-18
National P-value: RC53C01 03	46.78	77.26
Exercise Total Time (seconds)	38	44

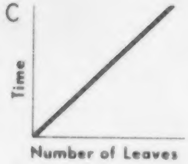
15. Mary counted the number of leaves that fell off her maple tree. She counted the number of leaves on the ground.

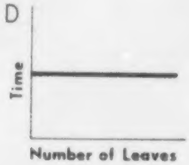
End of first hour - 20 leaves
End of second hour - 40 leaves
End of third hour - 60 leaves
End of fourth hour - 80 leaves

Fill in the oval beside the graph which best shows these results.

○ 

○ 

● 

○ 

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC54C01

NAEP #: C54C01-2

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

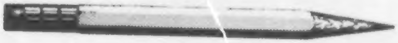
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 02-26

National P-value:
RC54C01 05 56.27

Exercise Total Time (seconds) 18

26.



About how long is the pencil shown above?

○ 10 kilograms
○ 10 liters
○ 10 millimeters
○ 10 meters
● 10 centimeters

○ I don't know.

S-C54C01-81S

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC54C04

NAEP #: C54C04-23

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

	13	17
Overlap: 1976-77 Package-Exercise:	08-14	08-24
National P-value: RC54C04 03	53.22	69.97
Exercise Total Time (seconds)	43	53

14. Barbara weighs a frog four different times and gets these weights: 14.1 grams, 14.4 grams, 15.0 grams, and 15.3 grams. The average is 14.7 grams.

The weight of the frog is probably closest to

○ 14.1 grams.
○ 14.4 grams.
● 14.7 grams.
○ 15.0 grams.
○ 15.3 grams.

○ I don't know.

RC54C04-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC54C07

NAEP #: C54C07-23

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	09-33	09-31
National P-value:		
RC54C07 03	40.71	59.77
Exercise Total Time (seconds)	32	30

33. **Each of thirty students measures the length of a playground. Which one of the following probably will be closest to the actual length?**

○ **Any one of the 30 results**

○ **The average of the 10 largest results**

● **The average of all 30 results**

○ **The average of the 10 smallest results**

○ **The largest result**

○ I don't know.

8-C54C07-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC54C12

NAEP #: C54C12-1

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 07-20

National P-value:
RC54C12 04 37.92

Exercise Total Time (seconds) 35

20.

About how long is the pencil shown above?

○ 1 centimeter
○ 2.5 centimeters
○ 4 centimeters
● 10 centimeters
○ 100 centimeters

○ I don't know.

○
○
○
○
○
○
○
○
○
○

RC54C12-01A

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC55C04

NAEP #: C55C04-1

Content Classification: 5. Process of inquiry
Sub-Classification: 5. Classification

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1976-77
Release Status: Released after 1976-77

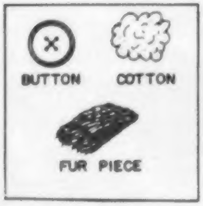
Overlap: 9
1976-77 Package-Exercise: 02-31

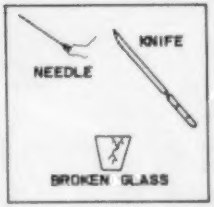
National P-value:

RC55C04A	01	26.06
RC55C04B	03	52.32
RC55C04C	02	52.53

Exercise Total Time (seconds) 144

31.





A. A kindergarten teacher arranged six objects in different ways as shown in the pictures above. Why did he arrange the objects this way?

● He did not want the children in his kindergarten class to hurt themselves.

○ He wanted to teach the children in his kindergarten class the difference between metal and nonmetal objects.

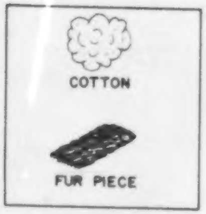
○ He wanted to find out whether there were more soft objects or hard objects.

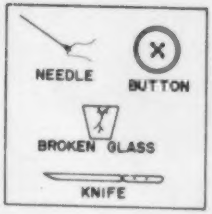
○ I don't know.

RC55C04-B1B

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

(Continued)


COTTON
FUR PIECE


NEEDLE
BUTTON
BROKEN GLASS
KNIFE

B. The same teacher arranged the six objects in another way as shown in the pictures above. Why did he arrange the objects this way?

○ He did not want the children in his kindergarten class to hurt themselves.

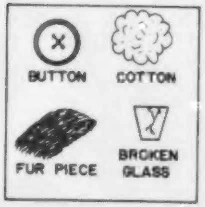
○ He wanted to teach the children in his kindergarten class the difference between metal and nonmetal objects.

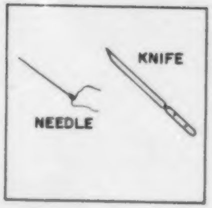
● He wanted to find out whether there were more soft objects or hard objects.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

31. (Continued)


BUTTON
COTTON
FUR PIECE
BROKEN GLASS


KNIFE
NEEDLE

C. The same teacher arranged the six objects in a third way as shown in the pictures above. Why did he arrange the objects this way?

○ He did not want the children in his kindergarten class to hurt themselves.

● He wanted to teach the children in his kindergarten class the difference between metal and nonmetal objects.

○ He wanted to find out whether there were more soft objects or hard objects.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC56C03

NAEP #: C56C03-123

Content Classification: 5. Process of inquiry
Sub-Classification: 6. Observing

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

		9	13	17
Overlap: 1976-77 Package-Exercise:		07-18	04-11	04-11
National P-value:				
RC56C03A	01	68.05	89.25	94.58
RC56C03B	03	72.89	90.13	93.11
RC56C03C	02	68.33	90.05	94.39
RC56C03D	03	62.76	88.12	93.03
Exercise Total Time (seconds)		92	63	57

18. David is deaf, and Betty is blind. They examine a beetle. Who is likely to make the following discoveries about the beetle?

		Only David	Only Betty	Both	I don't know.
A.	The beetle is bright red.	●	○	○	○
B.	The beetle smells very bad.	○	○	●	○
C.	The beetle makes a loud buzz when it flies.	○	●	○	○
D.	The beetle has a slippery back.	○	○	●	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

[illegible] BC56C04

[illegible] [illegible]C04-1

Content Classification: 5. Process of inquiry
Sub-Classification: 6. Observing

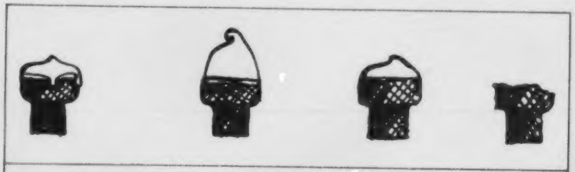
Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

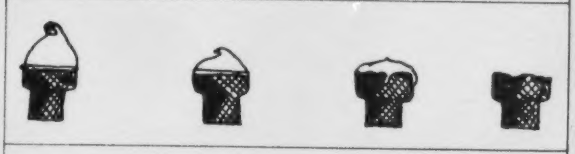
Overlap: 9
1976-77 Package-Exercise: 03-29

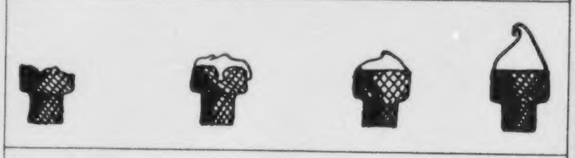
National P-value:
BC56C04 02 81.91

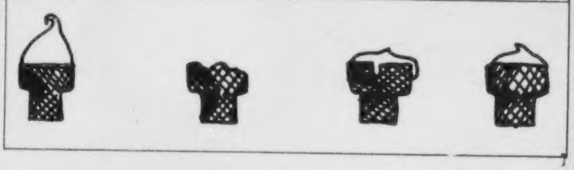
Exercise Total Time (seconds) 27

29. Which set of pictures best shows how an ice cream cone changes as you eat it? Fill in the oval beside the box you choose.

○ 

● 

○ 

○ 

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

B-C56C04-818

Release #: RC56C06

NAEP #: C56C06-3

Content Classification: 5. Process of inquiry
Sub-Classification: 6. Observing

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise: 17 / 02-15

National P-value:
RC56C06 01 86.63

Exercise Total Time (seconds) 50

15. Some grape leaves were accidentally sprayed with paint. Those leaves did not get moldy. Other unsprayed grape leaves did get moldy. This discovery led to a way to protect fruit trees and vines from many diseases caused by mold.

This shows that

- ● unexpected results are sometimes useful.
- ○ science and technology work together.
- ○ scientific laws are the result of careful experimentation.
- ○ measurement is important in science.

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC57C02

NAEP #: C57C02-23

Content Classification: 5. Process of inquiry
Sub-Classification: 7. Experimenting

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		09-35	09-33
National P-value:			
RC57C02	02	43.36	61.77
Exercise Total Time (seconds)		20	20

35. Which one of the following is essential in an experiment?

○ Making sure measurements can be made quickly

● Controlling all important variables

○ Using new equipment

○ Having at least two persons doing the experiment

○ I don't know.

R-C57C02-81R

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC58C05

NAEP #: C58C05-23

Content Classification: 5. Process of inquiry
Sub-Classification: 8. Interpretation of data

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13	17
1976-77 Package-Exercise:		07-16	07-16
National P-value:			
RC58C05A	02	77.78	84.12
RC58C05B	01	61.13	71.63
RC58C05C	01	94.35	98.19
RC58C05D	02	52.64	63.90
RC58C05E	01	70.61	77.56
RC58C05F	01	75.03	89.59
Exercise Total Time (seconds)		98	99

16. Dan and Rose want to find out whether the fifteen-year-old boys in their school are taller, on the average, than the fifteen-year-old girls. The school nurse has the following information about each student. Which information would be useful for answering their question and which information would not be useful?

		Useful	Not useful	I don't know.
A.	Last name, first initial	○	●	○
B.	Year and date of birth	●	○	○
C.	Height	●	○	○
D.	Weight	○	●	○
E.	Date height and weight were measured	●	○	○
F.	Sex of student	●	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC58C09

NAEP #: C58C09-1

Content Classification: 5. Process of inquiry
Sub-Classification: 8. Interpretation of data

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

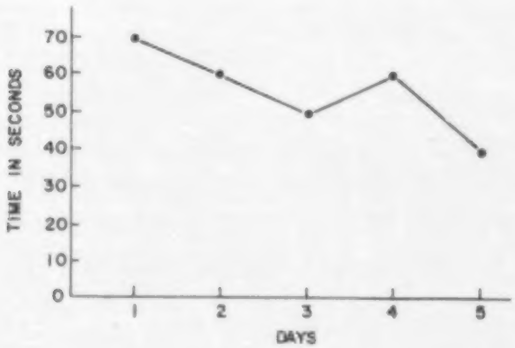
Overlap: 9
1976-77 Package-Exercise: 05-18

National P-value:

RC58C09A	02	45.97
RC58C09B	03	45.76
RC58C09C	01	63.23
RC58C09D	03	44.61

Exercise Total Time (seconds) 152
Percent Scorer Agreement 100

18. Blast O'Wind is a race horse that runs around a track each day. The graph below shows the time it took Blast O'Wind to run around the track each day.



A. How many seconds did it take Blast O'Wind to run around the track on Day 2?

○ 50 seconds
● 60 seconds
○ 70 seconds

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

(Continued)

B. On which day did Blast O'Wind run around the track in 40 seconds?

○ Day 1

○ Day 3

● Day 5

○ I don't know.

C. Look at the graph again. Then fill in the number of seconds that are missing in the table below.

Day	Seconds
1	70
2	60
3	50
4	60
5	40

D. Look at the graph again. On which day did Blast O'Wind run the fastest?

○ Day 1

○ Day 2

● Day 5

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

C

SCORING GUIDE
C58C09-1

C. Look at the graph again. Then fill in the number of seconds that are missing in the table below.

00 = No response

Acceptable

11 = 50

12 = 47-49 or 51-53

Unacceptable

20 = Other unacceptable, including any number outside the range 47-53

39 = I don't know.

Release #: RC58C19

NAEP #: C58C19-3

Content Classification: 5. [illegible]
Sub-Classification: 8. [illegible]

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 08-34

National P-value:
RC58C19 01 56.63

Exercise Total Time (seconds) 54

Distance from equator	Highest altitude at which trees can grow
500 miles	12,500 feet
1500 miles	11,500 feet
3000 miles	9,500 feet
4000 miles	4,000 feet

Only one of the following statements is supported by the data shown in the table above. Which one is it?

● The farther you are from the equator, the lower the altitude at which trees can grow.

○ The farther you are from the equator, the higher the altitude at which trees can grow.

○ The farther you are from the equator, the taller the trees are.

○ The farther you are from the equator, the smaller the trees are.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC61C05

NAEP #: C61C05-23

Content Classification: 6. Persistent societal problems
Sub-Classification: 1. Health and safety

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	05-19	02-07
National P-value:		
RC61C05 03	59.60	93.48
Exercise Total Time (seconds)	29	24

19. Venereal disease is common today

○ only among poor people.

○ only among criminals.

● among teenagers and adults in all kinds of communities.

○ among all city people.

○ only among young people.

○ mostly among people over 25.

○ I don't know.

RC61C05-019

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC61C07

NAEP #: C61C07-23

Content Classification: 6. Persistent societal problems
Sub-Classification: 1. Health and safety

Taxonomic Level: Comprehension
Assessed In: 1976-77
Reléase Status: Released after 1976-77

		13	17
Overlap: 1976-77 Package-Exercise:		05-06	08-10
National P-value:			
RC61C07A	02	35.46	49.78
RC61C07B	03	50.40	62.02
RC61C07C	03	32.64	41.45
RC61C07D	01	40.60	57.83
Exercise Total Time (seconds)		97	90

6. In order for a fire to occur, these three conditions are necessary.

1. A supply of burnable material
2. A supply of oxygen
3. A high temperature to start the fire

Which condition is each one of the following safety measures meant to control?

Safety Measures	Conditions 1	2	3	I don't know
A. Foam fire extinguishers	○	●	○	○
B. Heavy electric wires	○	○	●	○
C. "No Smoking" signs	○	○	●	○
D. Brick walls	●	○	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC61C10

NAEP #: C61C10-1

Content Classification: 6. Persistent societal problems
Sub-Classification: 1. Health and safety

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 01-23

National P-value:
RC61C10 04 52.61

Exercise Total Time (seconds) 50

23. Today, almost no one gets polio because

○ doctors have found new drugs which cure polio when it happens.

○ bad water, which used to cause polio, has been cleaned up.

○ people eat better food and get more exercise, so they are healthier.

● people are given a vaccine which keeps them from getting polio.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: RC62C01

NAEP #: C62C01-2

Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13
1976-77 Package-Exercise:	02-27

National P-value:

RC62C01	01	16.39

Exercise Total Time (seconds)	31

27. Which one of the following would probably happen within a few years if we stopped all use of powerful insecticides?

● Many more people in poor countries would starve.

○ Insects would take over the world.

○ Most crops would grow faster.

○ Most people would live longer because of a healthier environment.

○ New species of insects would start to appear.

○ I don't know.

RC62C01 RIR

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

[illegible] [illegible]

[illegible] C62C04-23

[illegible] Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

Taxonomic Level: Knowledge
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	06-14	06-14
National P-value:		
RC62C04 04	28.77	37.24
Exercise Total Time (seconds)	18	17

14. What is the major cause of air pollution in most large American cities?

○ Factories

○ Open trash burners

○ Fog

● Cars

○ I don't know.

○
○
○
○
○
○
○
○
○
○
○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC62C13

NAEP #: C62C13-3

Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment
Content Classification: 7. Science and self

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise: 17 / 05-11

National P-value:

RC62C13A	01	92.09
RC62C13B	02	87.01
RC62C13C	01	87.51
RC62C13D	01	76.79

Exercise Total Time (seconds) 80

11. Whether a sound damages your hearing depends upon

	Yes	No	I don't know.
A. how loud it is.	●	○	○
B. whether it is musical.	○	●	○
C. its pitch.	●	○	○
D. how long it lasts.	●	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC63C05

NAEP #: C63C05-23

Content Classification: 6. Persistent societal problems
Sub-Classification: 3. Growth and resource management

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	06-20	06-20
National P-value:		
RC63C05 05	35.59	38.25
Exercise Total Time (seconds)	27	25

20. What has been a major problem of planting high-yield grains in underdeveloped countries (the "green revolution")?

○ Too much food is produced.
○ The grain won't grow.
○ People won't eat the grain.
○ People can't harvest so much grain.
● Expensive fertilizers are needed.

○ I don't know.

R-C63C05-81R

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC63C09

NAEP #: C63C09-2

Content Classification: 6. Persistent societal problems
Sub-Classification: 3. Growth and resource management

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		13
1976-77 Package-Exercise:		05-08
National P-value:		
RC63C09A	01	97.28
RC63C09B	02	58.24
RC63C09C	02	77.54
Exercise Total Time (seconds)		59

8. **Is each of the following statements about food true or false?**

A.	**Right now there are many people in the world who don't have enough food to eat.**	**True** ●	**False** ○	**I don't know.** ○
B.	The United States has enough food stored to feed the rest of the world for at least five years if they need it.	True ○	False ●	I don't know. ○
C.	Africa and India are the only places that do not have enough food to feed all of their people.	True ○	False ●	I don't know. ○

○
○
○
○
○
○
○
○
○
○

RC63C09-R1R

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC63C10

NAEP #: C63C10-234

Content Classification: 6. Persistent societal problems
Sub-Classification: 3. Growth and resource management

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17	Adult
Overlap: 1976-77 Package-Exercise:		08-20	05-33	04-39
National P-value: RC63C10	01	33.38	47.19	
Exercise Total Time (seconds)		46	56	*

* No paced tape was used in this administration of this exercise.

20. Some people think that the solution to coal, gas and oil shortages is to switch over to electricity. In other words, if we run out of gas and oil we can just switch over to electric cars. What is wrong with this idea?

- ● Most electricity is produced from coal, gas and oil.
- ○ If we switch over to electricity many people will lose their jobs.
- ○ It has been proven that it is impossible to build electric cars in great quantities.
- ○ Electricity is far too expensive.
- ○ There is nothing wrong with this idea.

- ○ I don't know.

RC63C10-RIX

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC63C16

NAEP #: C63C16-3

Content Classification: 6. Persistent societal problems
Sub-Classification: 3. Growth and resource management

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	17
1976-77 Package-Exercise:	02-09
National P-value:	
RC63C16 03	82.11
Exercise Total Time (seconds)	29

9. Which one of the resources listed below was not important to people before 1900?

○ Coal

○ Forests

● Uranium ore

○ Sunlight

○ I don't know.

RC63C16-818

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: RC71C02

NAEP #: C71C02-23

Content Classification: 7. Science and self

Taxonomic Level: Knowledge
Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17
Overlap:			
1976-77 Package-Exercise:		03-20	03-18
National P-value:			
RC71C02A	02	71.51	72.16
RC71C02B	01	90.41	93.65
RC71C02C	01	79.56	86.23
RC71C02D	02	37.81	57.40
RC71C02E	02	39.69	58.99
RC71C02F	01	56.40	76.37
RC71C02G	01	89.94	87.91
RC71C02H	02	25.95	51.04
RC71C02I	01	51.63	53.88
Exercise Total Time (seconds)		72	63

20. Is each of the following foods rich in protein?

		Yes	No	I don't know.
A.	Sugar	○	●	○
B.	Beef	●	○	○
C.	Cheese	●	○	○
D.	Potatoes	○	●	○
E.	Lettuce	○	●	○
F.	Peanut butter	●	○	○
G.	Milk	●	○	○
H.	Fruit	○	●	○
I.	Beans	●	○	○

8-C71C02-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC71C04

NAEP #: C71C04-123

Content Classification: 7. Science and self

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		9	13	17
1976-77 Package-Exercise:		03-27	09-18	09-16
National P-value:				
RC71C04A	02	81.38	72.64	70.25
RC71C04B	02	85.61	95.52	97.33
RC71C04C	02	43.49	73.21	82.63
RC71C04D	01	77.32	96.08	97.93
RC71C04E	02	87.32	94.39	96.16
Exercise Total Time (seconds)		91	84	85

27. Is each of the following a safe or unsafe practice?

		Safe	Unsafe	I don't know.
A.	Using a light weight extension cord with an electric heater	○	●	○
B.	Storing paint thinner near the gas hot water heater	○	●	○
C.	Keeping drain cleaner on an open shelf near the bathroom sink	○	●	○
D.	Reading operating instructions for all electrical appliances before using them	●	○	○
E.	Using a fork to remove toast stuck in a toaster while the toaster is still plugged in	○	●	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

8-C71C04-818

Release #: RC81C07

NAEP #: C81C07-3

Content Classification: 8. Science and technology
Sub-Classification: 1. Biological
Content Classification: 1. Biology
Sub-Classification: 4. Heredity

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	17
1976-77 Package-Exercise:	05-19

National P-value:

RC81C07A	02	55.87
RC81C07B	01	81.05
RC81C07C	02	76.15

Exercise Total Time (seconds) 68

19. Sixty years ago a farmer had an average yield of 50 bushels per acre in his corn field. Today, a farmer using the same field averages 100 bushels of corn per acre. Is each of the following a likely explanation for the change?

	Yes	No	I don't know.
A. The climate has changed so that corn grows better now.	○	●	○
B. The farmer is using different kinds of corn plants which have been bred to give more corn per plant.	●	○	○
C. The increase of pollution in the air has made the farmer's plants become stronger to resist pollution and also to produce more corn.	○	●	○

RC81C07-81

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: BC82C04

NAEP #: C82C04-234

Content Classification: 8. Science and technology
Sub-Classification: 2. Physical

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

		13	17	Adult
Overlap: 1976-77 Package-Exercise:		06-05	06-05	02-31
National P-value:				
BC82C04A	02	92.17	97.44	
BC82C04B	02	68.28	85.67	
BC82C04C	02	55.34	73.94	
BC82C04D	01	94.74	97.74	
BC82C04E	01	81.08	83.02	
Exercise Total Time (seconds)		57	56	*

* No paced tape was used in this administration of this exercise.

5. Computers can do some things more easily than people can do them.

Compare the skills of people and computers on the following things.

	People do better	Computers do better	I don't know.
A. Remembering a whole encyclopedia word for word	○	●	○
B. Processing payrolls for large corporations	○	●	○
C. Forgetting everything they are told to forget	○	●	○
D. Writing a story	●	○	○
E. Reading handwriting	●	○	○

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC82C12

NAEP #: C82C12-3

Content Classification: 8. Science and technology
Sub-Classification: 2. Physical
Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 05-36

National P-value:
RC82C12 02 42.35

Exercise Total Time (seconds) 25

36. It is known that certain gases condense around crystals. What is this knowledge used for?

○ Detecting radio signals
● Seeding clouds to make rain
○ Making certain crops mature faster
○ Measuring ocean depths

○ I don't know.

84 82C12 818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: RC91C02

NAEP #: C91C02-23

Content Classification: 9. Decision making
Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	04-25	04-25
National P-value:		
RC91C02 02	58.17	70.99
Exercise Total Time (seconds)	35	33

25. Many people are infected by a tropical disease which is carried by a certain type of insect. What should biologists attacking the problem do first?

○ Destroy all those insects

● Predict what may happen if all those insects were destroyed

○ Not worry, because there are no tropical diseases in this country

○ Leave all the insects alone

○ I don't know.

○
○
○
○
○
○
○
○
○
○

RC91C02-818

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC91C06

NAEP #: C91C06-23

Content Classification: 9. Decision making
Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	03-22	03-20
National P-value:		
RC91C06 03	61.81	71.13
Exercise Total Time (seconds)	58	48

22. Some cities have passed laws against people burning trash. Now the cities use more trucks to haul the trash out of the city, and the air is polluted with more truck exhaust. What does this example show?

○ Sensible laws can help reduce the air pollution problem.

○ Reducing air pollution will always increase other kinds of pollution.

● The possible outcomes of a pollution law should be thought about before the law is passed.

○ Pollution laws only serve special interest groups.

○ I don't know.

8-C91C06-81A

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: RC91C13

NAEP #: C91C13-3

Content Classification: 9. Decision making

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		17
1976-77 Package-Exercise:		11-05
National P-value:		
RC91C13A	02	79.75
RC91C13B	02	76.86
RC91C13C	01	83.68
RC91C13D	01	68.44
RC91C13E	02	60.93
Exercise Total Time (seconds)		111

5. The city council must decide whether to use a piece of land to build a factory or a park. There is a conflict between those who favor economic growth and those concerned with environmental quality. Is each of the following a statement of a goal or desired outcome of the solution chosen, or a statement of a barrier or obstacle to the solution of the problem?

	Goal	Barrier	I don't know.
A. Both purposes cannot be achieved on the same land at the same time.	○	●	○
B. There is no other land available that is as good for either purpose.	○	●	○
C. The decision should be acceptable to a majority of the citizens.	●	○	○
D. The decision should not greatly increase air pollution or unemployment.	●	○	○
E. The local newspaper is pushing strongly for using the area for a park and will fight any compromise.	○	●	○

8-C91C13-81B

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

PART C

RELEASED CHANGE AND INTERNATIONAL ASSESSMENT EXERCISES:

Sample Documentation and Exercise

SAMPLE DOCUMENTATION BOX

① Release #: 8101022

② NAEP #: 101022-12

③ Content Classification: 1. Biology
Sub-Classification: 2. Energy transformation

④ 1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

⑤ Taxonomic Level: Comprehension
⑥ Assessed In: 1972-73, 1976-77
⑦ Release Status: Released after 1976-77

⑧ Overlap:		9	13
⑨ 1976-77 Package-Exercise:		05-32	05-33
⑩ National P-value:			
ⓐ 8101022	ⓑ 01	ⓒ 36.59	83.01
⑪ Exercise Total Time (seconds)		36	30
⑫ Percent Scorer Agreement		99	100

EXPLANATION OF EXERCISE DOCUMENTATION

1. 1976-77 Release Number: See Sections 1 and 4 of the Introduction.

2. NAEP Number (101022) and Age-Overlap Indicator (-12): NAEP reference number and age groups assessed (1 is age 9, 2 is age 13, 3 is age 17 and 4 is adults).

3. Content Classifications: See Section 3, Exhibits 3 and 4.

4. 1972-73 Objective and Subobjective: See Section 4.

5. Taxonomic Level: Condensed version of Bloom's Taxonomy of Educational Objectives, Cognitive Domain. See Section 3.

6. Assessed In: Assessed by NAEP in the 1972-73 and 1976-77 science assessments.

7. Release Status: Released for public use after the 1976-77 assessment.

8. Overlap: Age groups assessed with this exercise in 1976-77.

9. 1976-77 Package-Exercise: Location of this exercise in assessment packages.

10. National P-Value: One line for each exercise part. Each line has (a) result number to identify the part, (b) a key to identify the correct response choice and (c) the national percentage of respondents making that choice in 1976-77.

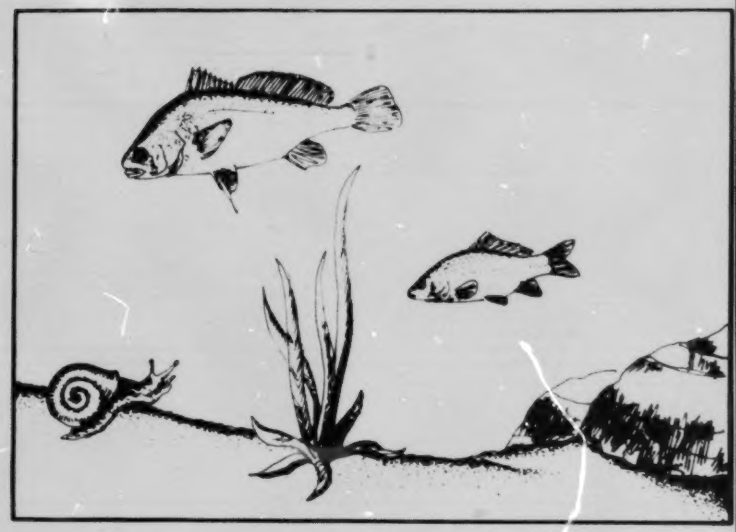
11. Exercise Total Time: Number of seconds allowed on paced audio tape to read and respond to this exercise.

12. Percent Scorer Agreement: Percent of agreement between independent scorings of about 10% of the responses in an age group. See Section 1.

13. NAEP number with subject area indicator (8- is science), assessment indicator (-428) and age-overlap indicator (-12). See Section 1.

SAMPLE EXERCISE

32. Draw a large X on the living thing in this picture that makes oxygen in t presence of sunlight.



○ I don't know.

⑬

8-101022-428-1,2

Release #: R101022

NAEP #: 101022-12

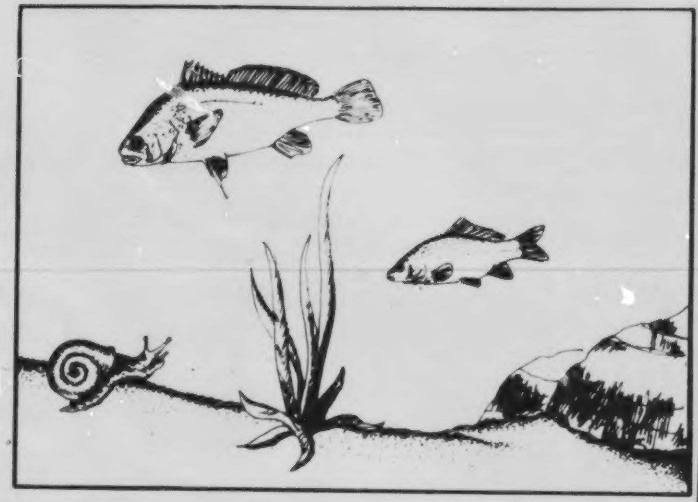
Content Classification: 1. Biology
Sub-Classification: 3. Energy transformation

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	05-32	05-33
National P-value:		
R101022 01	36.59	83.01
Exercise Total Time (seconds)	36	30
Percent Scorer Agreement	99	100

32. Draw a large X on the living thing in this picture that makes oxygen in the presence of sunlight.



R101022-42B-1-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

SCORING GUIDE
101022-12

Draw a large X on the living thing in this picture that makes oxygen in the presence of sunlight.

00 = No response

Acceptable

11 = An "X" on plant

12 = An "X" on plant and dark part of rock (could be moss)

Unacceptable

20 = Other unacceptable, including combinations
Large fish, small fish, and rock

21 = An "X" on any one animal

Snail
Large fish
Small fish

22 = An "X" on one inanimate object

Rock
On the sand

23 = More than one animal but nothing else

39 = I don't know.

Release #: [redacted]

NAEP #: [redacted]

Content Classification: [redacted]
Sub-Classification: [redacted]

1972-73 Objective: I. KNOW [redacted] SCIENCE.

1972-73 Subobjective: A. Know facts [redacted]

Taxonomic Level: Knowledge
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

		13	17
Overlap: 1976-77 Package-Exercise:		07-27	04-30
National P-value:			
R10102301	00	.09	3.07
R10102302	01		.03
R10102303	01	86.17	90.07
R10102304	01	16.02	20.37
R10102305	01	31.22	39.65
R10102306	01	38.30	49.43
R10102307	01	9.65	12.75
R10102308	01	.08	.16
R10102310	01	74.19	65.06
R10102311	01	14.87	7.63
Exercise Total Time (seconds)		91	89
Percent Scorer Agreement		99	99

Note: The first P-value is the national percentage not responding to the exercise. Each remaining P-value is the national percentage of respondents giving at least one response in the corresponding scoring category. P-values are listed in the same order as the scoring categories.

27 Name as many DIFFERENT KINDS of POISONOUS **snakes and lizards of the** United States as you can.

(1) ____________________

(2) ____________________

(3) ____________________

(4) ____________________

(5) ____________________

(1) (2) (3) (4) (5)

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

SCORING GUIDE
101023-23

Name as many different kinds of poisonous snakes and lizards of the United States as you can.

Note: Cannot get credit for general name if a specific name is also mentioned.

00 = No response

Acceptable

10 = Other acceptable (Write out any you find)

Fangless night snake
Lyre snake

11 = Any type of rattlesnake (Crotalus or Sistrurus)

Massasauga
Sidewinder
Pigmy
Diamondback
__________rattlesnake (verifiable or not)
Florida rattler
Forest rattlesnake
Ground rattler
Pacific rattlesnake
Prowell rattler snakes
Texas rattler
Tree rattlesnake
Western diamondback rattlesnake

Must have the word 'rattlesnake'

12 = Coral snake (Micrurus or Micruroides)

Eastern coral snake
Western coral snake

13 = Copperhead or Cantil (Agkistrodon)

Highland moccasin

14 = Cottonmouth or Watermoccasin (Agkistrodon) - cannot get credit for both

Moccasin
Cottonmouth moccasin

101023-23 Cont'd

15 = Gila monster

16 = Mexican beaded lizard

17 = Pelagic sea snake (must be a correct one):

Baked sea snake
Yellow head sea snake

Unacceptable

20 = Other unacceptable

39 = I don't know.

Release #: R101024

NAEP #: 101024-1

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-06

National P-value:
R101024 01 18.56

Exercise Total Time (seconds) 43

6. Which one of the following is TRUE?

- ● Ice, water, and steam are the same substance.
- ○ Ice, water, and steam are three different substances.
- ○ Ice and water are the same substance, but steam is a different substance.
- ○ Water and steam are the same substance, but ice is a different substance.

- ○ I don't know.

8-101024-418-1

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: R101028

NAEP #: 101028-1

Content Classification: 5. Process of inquiry
Sub-Classification: 6. Observing

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 06-28

National P-value:

R10102801	00	4.96
R10102802	01	.18
R10102803	01	66.75
R10102804	01	44.95
R10102805	01	.48
R10102806	01	67.60
R10102807	01	39.87
R10102808	01	13.65
R10102809	01	53.23
R10102810	01	7.30
R10102811	01	.38
R10102812	01	51.56
R10102813	01	3.14

Exercise Total Time (seconds) 89
Percent Scorer Agreement 99

Note: The first P-value is the national percentage not responding to the exercise. Each remaining P-value is the national percentage of respondents giving at least one response in the corresponding scoring category. P-values are listed in the same order as the scoring categories.

28. Look at one of the pencils we gave you.

List as many materials as you can that make up that pencil.

(1) ____________________

(2) ____________________

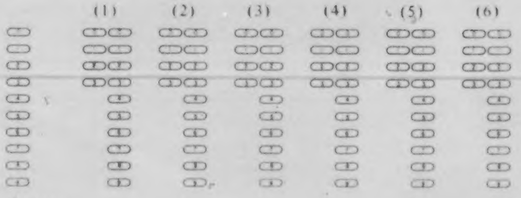
(3) ____________________

(4) ____________________

(5) ____________________

(6) ____________________

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.



S-101028-428-1

SCORING GUIDE
101028-1

Look at one of the pencils we gave you. List as many materials as you can that make up that pencil.

00 = No response

Acceptable

10 = Other acceptable

11 = Lead

12 = Eraser

13 = Graphite; carbon

14 = Wood

15 = Paint (can count more than one if different colors are named)

Yellow paint

16 = Rubber

17 = Metal (can count more than one if specific metals are named; any metal possible metal acceptable)

Steel (common)
Brass
Tin
Copper
Metal
Iron
Aluminum
Flat iron

18 = Ink

Black ink

19 = Glue

101028-1 Cont'd

Unacceptable

20 = Other unacceptable

Words
Markings
Print
Writing

39 = I don't know.

Release #: R101030

NAEP #: 101030-123

Content Classification: 1. Biology
Sub-Classification: 0. Germ theory and disease
Content Classification: 7. Science and self

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

	9	13	17
Overlap:			
1976-77 Package-Exercise:	04-28	05-27	06-27
National P-value:			
R101030 01	22.77	58.48	80.29
Exercise Total Time (seconds)	31	26	24
Percent Scorer Agreement	99	99	99

28. Suppose that someone put a thermometer in your mouth when you were not sick. If your temperature were normal, what would it be?

ANSWER ________________ degrees

S101030-428 1 2 3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

SCORING GUIDE
101030-123

Suppose that someone put a thermometer in your mouth when you were not sick. If your temperature were normal, what would it be?

00 = No response

Acceptable

11 = 97.6 degrees F to 99.6 degrees F (degrees and F not necessary)

12 = 36.4 degrees C to 37.6 degrees C (C and degrees not necessary)

Note: the label '%' is acceptable

Unacceptable

20 = Other unacceptable

98.6 degrees C
9.6 degrees
1.1 degrees
102 degrees

21 = 90.0 degrees F to 97.5 degrees F
99.7 degrees F to 100.0 degrees F
32.2 degrees C to 36.3 degrees C
37.7 degrees C to 37.8 degrees C

23 = 0 degrees; zero; no temperature

39 = I don't know.

Release #: R101038

NAEP #: 101038-23

Content Classification: 1. Biology
Sub-Classification: 6. Evolution

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	04-32	04-32
National P-value:		
R101038 02	28.30	49.00
Exercise Total Time (seconds)	37	32

32. Which one of the following animals probably appeared on earth before the others?

○ Dinosaur
● Fish
○ Horse
○ Man
○ Snake

○ I don't know.

R-101038-428-2.3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101042

NAEP #: 101042-234

Content Classification: 1. Biology
Sub-Classification: 5. Systems

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:		13	17	Adult
1976-77 Package-Exercise:		10-04	01-06	02-01
National P-value:				
R101042A	02	71.05	81.49	
R101042B	01	66.66	82.79	
R101042C	01	84.01	89.50	
R101042D	01	57.76	67.35	
R101042E	01	77.55	90.45	
Exercise Total Time (seconds)		113	78	*

* No paced tape was used in this administration of this exercise.

Note: The 1972-73 (all ages) and the 1976-77 (adult) versions of this exercise had additional Parts D & E.

4. The blood carries on many functions in the human body. Indicate whether each question on this and the following page describes a function of the blood.

A. Is it a function of the blood to digest food?

○ Yes
● No

○ I don't know.

B. Is it a function of the blood to protect against disease?

● Yes
○ No

○ I don't know.

C. Is it a function of the blood to carry food to the cells?

● Yes
○ No

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

4. (Continued)

D. Is it a function of the blood to carry waste materials away from the cells?

● Yes
○ No

○ I don't know.

E. Is it a function of the blood to carry oxygen to different parts of the body?

● Yes
○ No

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101044

NAEP #: 101044-23

Content Classification: 1. Biology
Sub-Classification: 5. Systems

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	09-04	10-06
National P-value:		
R101044 04	69.86	88.72
Exercise Total Time (seconds)	40	40

4. The MAIN function of the kidneys is to

○ digest food.
○ circulate the blood.
○ produce red blood cells.
● remove waste materials from the blood.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-101044-428-2,3

Release #: R101045

NAEP #: 101045-2

Content Classification: 1. Biology
Sub-Classification: 7. Ecology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 10-02

National P-value:
R101045 04 44.88

Exercise Total Time (seconds) 72

2. A parasite is an organism that

○ lives by getting food from dead organisms.

○ lives with another organism, and they help each other.

○ lives with another organism, but gets no food from the other organism.

● lives in or on another organism, from which it gets its food, without helping the other organism.

○ I don't know.

○
○
○
○
○
○
○
○
○
○

S-101045-428-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101048

NAEP #: 101048-1

Content Classification: 1. Biology
Sub-Classification: 0. Germ theory and disease
Content Classification: 7. Science and self

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

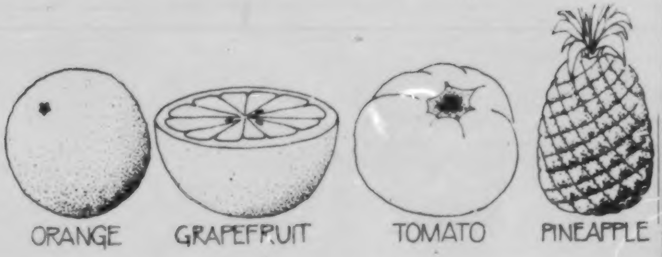
Taxonomic Level: Comprehension
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 06-34

National P-value:
R101048 03 44.21

Exercise Total Time (seconds) 44

34. Look at the pictures below.



The **MOST** important reason for having some of these kinds of foods daily i

○ they taste refreshing.

○ they help you gain weight.

● they contain an essential vitamin.

○ they help you wake up in the morning.

○ they are protein foods, which build muscle.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

S-101048-428-1

Release #: R101049

NAEP #: 101049-123

Content Classification: 1. Biology
Sub-Classification: 3. Energy transformation
Sub-Classification: 7. Ecology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13	17
1976-77 Package-Exercise:	02-04	08-31	05-02
National P-value:			
R101049 02	46.47	70.24	86.30
Exercise Total Time (seconds)	42	42	40

4. Fish and other animals in the ocean take oxygen out of the ocean water. Much of the oxygen dissolved in the ocean water comes from

○ lowtide beach sand.

● plants living in the water.

○ chemical breakdown of salt.

○ decaying plants and animals.

○ I don't know.

R-101049-428-1,2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101055

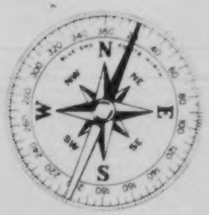
NAEP #: 101055-12

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:		9	13
1976-77 Package-Exercise:		03-09	03-07
National P-value:			
R101055	03	53.78	77.88
Exercise Total Time (seconds)		42	42



How would you explain the operation of this kind of compass?

○ The wind blows the needle.

○ The needle likes to point north.

● The needle interacts with the earth.

○ The earth's spinning makes the needle spin.

○ I don't know.

8-101055-428-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101058

NAEP #: 101058-23

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	05-29	02-29
National P-value:		
R101058 03	26.81	32.18
Exercise Total Time (seconds)	43	42

29. The picture on a television screen results from

○ atoms striking the screen.

○ x-rays striking the screen.

● electrons striking the screen.

○ light rays striking the screen.

○ I don't know.

R-101058-428-2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101062

NAEP #: 101062-12

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	04-26	10-06
National P-value:		
R101062 04	49.36	71.94
Exercise Total Time (seconds)	42	40

26. Which one of the following is MOST likely to make a rock break open?

○ Dew evaporating on the rock
○ Tree leaves decaying on the rock
○ Snow melting in a crack in the rock
● Water freezing in a crack in the rock

○ I don't know.

R-101062-428-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101069

NAEP #: 101069-12

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap:	9	13
1976-77 Package-Exercise:	03-03	04-36
National P-value:		
R101069 03	69.44	69.82
Exercise Total Time (seconds)	27	33

Note: In 1969-70 & 1972-73 age 9 time was 60 seconds.

3. Each year the Earth moves once around

○ Mars.
○ Venus.
● the Sun.
○ the Moon.
○ all of the other planets.

○ I don't know.

○
○
○
○
○
○
○
○
○
○

R-101069-138-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101076

NAEP #: 101076-1

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 9
1976-77 Package-Exercise: 03-13

National P-value:
R101076 01 78.55

Exercise Total Time (seconds) 31

Note: In 1969-70 & 1972-73 age 9 time was 61 seconds.

13. Electricity can be used for all of the following EXCEPT

● taking walks.
○ cooking food.
○ heating homes.
○ lighting rooms.

○ I don't know.

8-101076-138-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101077

NAEP #: 101077-1

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 9
1976-77 Package-Exercise: 03-11

National P-value:
R101077 04 66.36

Exercise Total Time (seconds) 32

Note: In 1969-70 & 1972-73 age 9 time was 61 seconds.

11. Putting sand and salt together makes

- ○ a chemical.
- ○ a compound.
- ○ an element
- ● a mixture.
- ○ a solution.

- ○ I don't know.

S-101077-138-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101080

NAEP #: 101080-1

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level:	Knowledge
Assessed In:	1969-70, 1972-73, 1976-77
Release Status:	Released after 1976-77
Overlap:	9
1976-77 Package-Exercise:	05-26

National P-value:
R101080 01 91.57

Exercise Total Time (seconds) 61

26. Which of the following would be most likely to rust?

● An iron nail
○ A plastic comb
○ A glass marble
○ A rubber balloon

○ I don't know.

8-101080-138-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101082

NAEP #: 101082-12

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	07-09	06-25
National P-value:		
R101082 04	56.21	75.34
Exercise Total Time (seconds)	61	33

9. **Which of the following is the largest body?**

○ Earth
○ Mars
○ The Moon
● The Sun
○ Venus

○ I don't know.

R-101082 1 38-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101085

NAEP #: 101085-1

Content Classification: 1. Biology
Sub-Classification: 5. Systems

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 9
1976-77 Package-Exercise: 07-03

National P-value:
R101085 01 17.94

Exercise Total Time (seconds) 29

Note: In 1969-70 & 1972-73 age 9 time was 60 seconds.

3. What is the main way that sweating helps your body?

● It helps cool your body.
○ It keeps your skin moist.
○ It keeps you from catching cold.
○ It gets rid of the salt in your body

○ I don't know.

○
○
○
○
○
○
○
○
○
○

S-101085-13B-1

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: R101088

NAEP #: 101088-1

Content Classification: 1. Biology
Sub-Classification: 9. Growth and development

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

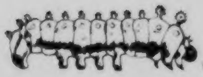
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

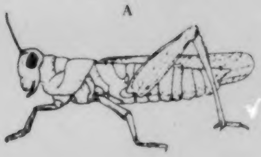
Overlap: 9
1976-77 Package-Exercise: 07-01

National P-value:
R101088 02 90.73

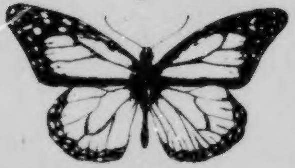
Exercise Total Time (seconds) 61

1. This caterpillar  will grow up to look like which of the following?

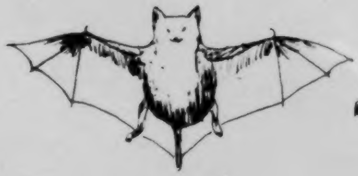
A



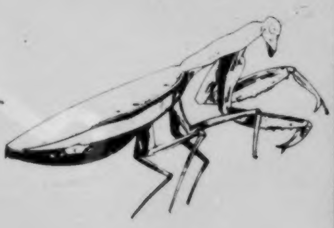
B



C



D



○ A
● B
○ C
○ D

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-101088-138-1

Release #: R101097

NAEP #: 101097-12

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap:	9	13
1976-77 Package-Exercise:	04-30	01-01
National P-value:		
R101097 04	71.00	86.85
Exercise Total Time (seconds)	62	31

30. How many stars are there in the universe?

○ 12

○ 893

○ About a million

● More than have been counted

○ I don't know.

R-101097-138-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101100

NAEP #: 101100-1

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 9
1976-77 Package-Exercise: 02-12

National P-value:
R101100 04 39.88

Exercise Total Time (seconds) 62

12. The bones and shells of sea animals that lived millions of years ago can be found in the

○ ocean water.

○ ice on a pond.

○ trunks of trees.

● rocks in the ground.

○ I don't know.

R101100-13S-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: B101103

NAEP #: 101103-2

Content Classification: 1. Biology
Sub-Classification: 0. Germ theory and disease
Content Classification: 7. Science and self

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 02-06

National P-value:
B101103 03 52.51

Exercise Total Time (seconds) 46

6 An average serving of which of the following foods would provide the most protein for building and repairing body tissues?

○ Boiled potatoes
○ Green beans
● Lean meat
○ Oatmeal
○ White bread

○ I don't know

B-101103-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101107

NAEP #: 101107-2

Content Classification: 1. Biology
Sub-Classification: 9. Growth and development

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 05-30

National P-value:
R101107 01 59.36

Exercise Total Time (seconds) 48

30. Fertilization takes place when a sperm

● enters an egg.
○ becomes an egg.
○ becomes an embryo.
○ enters another sperm.
○ reaches a certain age.

○ I don't know.

R-101107-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: B101109

NAEP #: 101109-24

Content Classification: 1. Biology
Sub-Classification: 7. Ecology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap:	13	Adult
1976-77 Package-Exercise:	09-02	02-03

National P-value:

B101109	04	48.18

Exercise Total Time (seconds) 63 *

* No paced tape was used in this administration of this exercise.

2. Green plants are important to animals because the plants

○ consume both food and oxygen.

○ consume food and give off oxygen.

○ consume food and give off carbon dioxide.

● produce food and give off oxygen.

○ produce food and give off carbon dioxide.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101110

NAEP #: 101110-2

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 02-05

National P-value:
R101110 03 91.94

Exercise Total Time (seconds) 30

5. What is needed to move cars, heat hamburgers, and light rooms?

○ Conservation
○ Efficiency
● Energy
○ Friction
○ Magnetism

○ I don't know

R 101110 [illegible]

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101113

NAEP #: 101113-2

Content Classification: 1. Biology
Sub-Classification: 0. Germ theory and disease

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 06-30

National P-value:
R101113 03 73.04

Exercise Total Time (seconds) 32

30. Which of the following substances is added to drinking water to help prevent tooth decay?

○ Calcium
○ Chlorine
● Fluoride
○ Iodide
○ Iron

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101124

NAEP #: 101124-2

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 02-03

National P-value:
R101124 01 50.65

Exercise Total Time (seconds) 32

3. From which of these can all kinds of matter be formed?

● Atoms
○ Compounds
○ Mixtures
○ Protons

○ I don't know.

R 101124-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101125

NAEP #: 101125-24

Content Classification: 1. Biology
Sub-Classification: 6. Evolution

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

	13	Adult
Overlap: 1976-77 Package-Exercise:	09-05	02-04
National P-value: R101125 04	59.51	
Exercise Total Time (seconds)	31	*

* No paced tape was used in this administration of this exercise.

5. Which of the following have probably been on Earth the shortest time?

○ Alligators
○ Dragonflies
○ Fish
● Men
○ Snails

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101129

NAEP #: 101129-2

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism
Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 08-29

National P-value:
R101129 02 54.91

Exercise Total Time (seconds) 47

29. Which of the following helps to account for the fact that a compass can be used to find north on Earth?

○ Earth has only one moon.
● Earth has a magnetic field.
○ Earth reflects the Sun's light.
○ Most of Earth is covered by water.
○ Earth's temperature is not constant.

○ I don't know.

○○○○○○○○○○

R-101129-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101132

NAEP #: 101132-3

Content Classification: 1. Biology
Sub-Classification: 2. Cell theory

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	17
1976-77 Package-Exercise:	05-04
National P-value:	
R101132 01	79.80
Exercise Total Time (seconds)	46

4. Which of the following is often considered to be the simplest biological unit of structure?

● The cell

○ The organ

○ The tissue

○ The organism

○ The population

○ I don't know.

0-101132-130-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101140

NAEP #: 101140-3

Content Classification: 1. Biology
Sub-Classification: 8. Behavior

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 03-05

National P-value:
R101140 05 93.30

Exercise Total Time (seconds) 45

5. Which of the following is an example of a simple reflex?

○ Reading a book
○ Solving problems
○ Biting nails habitually
○ Learning by trial and error
● Recoiling upon touching a hot stove

○ I don't know.

R101140-1 18 1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101141

NAEP #: 101141-34

Content Classification: 1. Biology
Sub-Classification: 5. Systems

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	17	Adult
1976-77 Package-Exercise:	08-03	02-05
National P-value:		
R101141 03	15.61	
Exercise Total Time (seconds)	48	*

*** No paced tape was used in this administration of this exercise.**

3. In the human female, fertilization of an egg usually occurs in the

○ cervix.
○ ovary.
● oviduct.
○ uterus.
○ vagina.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101146

NAEP #: 101146-3

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap:	17
1976-77 Package-Exercise:	07-31
National P-value:	
R101146 03	74.93
Exercise Total Time (seconds)	49

31. The particles that make up atoms are usually said to be

○ protons and electrons only.

○ protons and neutrons only.

● protons, neutrons, and electrons.

○ alpha, beta, and gamma rays.

○ alpha particles and beta particles only.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R101150

NAEP #: 101150-3

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 17
1976-77 Package-Exercise: 01-08

National P-value:
R101150 01 47.59

Exercise Total Time (seconds) 30

8. The particles most directly involved in forming chemical bonds are

● electrons.
○ neutrons.
○ photons.
○ positrons.
○ protons.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101218

NAEP #: 101218-12

Content Classification: 2. Physical science
Sub-Classification: 4. Waves

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: A. Know facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	01-03	01-06
National P-value: R101218 04	29.99	69.09
Exercise Total Time (seconds)	70	70

3. Why is it cooler to wear light-colored clothes in the summer?

○ Light-colored clothes let more air in.
○ Light-colored clothes prevent sweating.
○ Light-colored clothes are not as heavy as dark-colored clothes.
● Light-colored clothes reflect more sunlight than dark-colored clothes.

○ I don't know.

R-101218-428-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R101220

NAEP #: 101220-2

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Comprehension
Assessed In: 1969-70,1976-77
Release Status: Released after 1969-70

Overlap:		13
1976-77 Package-Exercise:		01-03
National P-value:		
R101220	02	41.49
Exercise Total Time (seconds)		33

37. Most of the chemical energy of the gasoline burned in a car is not used to move the car but is changed into

○ electricity.
● heat.
○ light.
○ magnetism.
○ sound.

○ I don't know.

R101220B128 2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R102013

NAEP #: 102013-12

Content Classification: 1. Biology
Sub-Classification: 4. Heredity

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: B. Know laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	03-14	09-08
National P-value:		
R102013 03	66.32	94.26
Exercise Total Time (seconds)	42	42

14. Why does a child tend to look like his parents?

○ He gets his parents' blood before he is born.

○ He eats similar food and lives in similar surroundings with his parents.

● The father's and mother's cells which produced the child cause him to look like his parents.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R102014

NAEP #: 102014-123

Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: B. Know laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13	17
1976-77 Package-Exercise:	05-31	06-24	10-01
National P-value:			
R102014- 01	19.26	26.19	47.32
Exercise Total Time (seconds)	57	63	53

31. All winds blow from

● high air pressure areas to low air pressure areas.
○ high altitudes (mountains) to low altitudes (lowlands)
○ high temperature (hot) areas to low temperature (cold) areas
○ high latitudes (North and South Poles) to low latitudes (Equator)

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R102017

NAEP #: 102017-1

Content Classification: 1. Biology
Sub-Classification: 9. Growth and development
Content Classification: 4. Integrated topics
Sub-Classification: 3. Change

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: E. Know laws (principles).

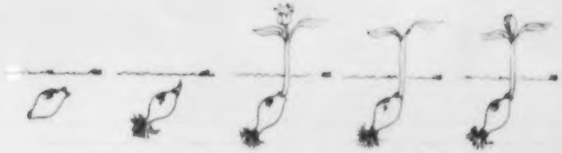
Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

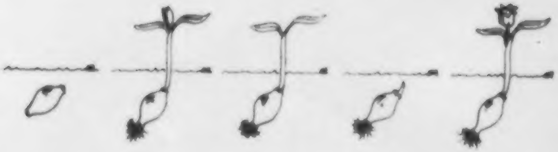
Overlap: 9
1976-77 Package-Exercise: 04-25

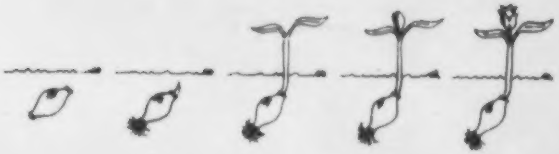
National P-value:
R102017 03 82.81

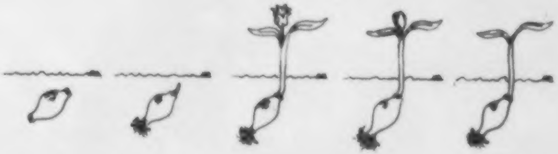
Exercise Total Time (seconds) 51

25. Which row of pictures shows BEST the way a plant grows?

○ 

○ 

● 

○ 

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-102017-42B-1

Release #: R102019

NAEP #: 102019-12

Content Classification: 3. Earth science
Sub-Classification: 3. Oceanography

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: B. Know laws (principles).

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	01-06	01-08
National P-value: R102019 03	40.09	49.46
Exercise Total Time (seconds)	72	71

6. Think of diving into the ocean near the Equator. As you go deeper, the water gets colder because

○ the saltiest water is always coldest and sinks to the bottom.

○ there are no waves or winds to mix hot and cold water.

● warm water is lighter than cold water and stays on top.

○ there are fewer fish and other animals to warm it up down there.

○ I don't know.

8-102019-42B-1.2

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: R102020

NAEP #: 102020-3

Content Classification: 2. Physical science
Sub-Classification: 4. Waves

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: E. Know laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	17
1976-77 Package-Exercise:	09-02
National P-value:	
R102020 04	27.39
Exercise Total Time (seconds)	48

Scientists have been studying the nature of light for several centuries. Based on the evidence accumulated up to this time, it is probably BEST to say that

○ light is a wave.
○ light is a stream of particles.
○ light is both a particle and a wave.
● light simultaneously acts like a particle and a wave.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R102021

NAEP #: 102021-2

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: E. Know laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 04-29

National P-value:
R102021 05 42.64

Exercise Total Time (seconds) 61

29. Of the following, which is the most direct cause of the tides on Earth?

○ The tilt of the Earth's poles
○ The magnetic field of the Earth
○ The slope of land near the shoreline
○ The revolution of the Earth about the Sun
● The effect of the Moon's gravitational pull on the Earth

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R102024

NAEP #: 102024-3

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: F. Know laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 05-05

National P-value:
R102024 05 25.14

Exercise Total Time (seconds) 45

5. If a mineral sample contains large crystals, geologists believe that the mineral probably

○ was formed in a volcano.
○ contains a valuable metal.
○ cooled instantly under water.
○ has cleavage in three directions.
● solidified slowly from hot liquid.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R102025

NAEP #: 102025-3

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

1972-73 Subobjective: E. Know laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 01-02

National P-value:
R102025 01 54.41

Exercise Total Time (seconds) 45

2. Which of the following happens when any combustion reaction takes place?

● Heat is evolved.

○ Some oxygen is formed.

○ No chemical change occurs.

○ All of the products are gases.

○ Ions are major products formed.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R104014

NAEP #: 104014-12

Content Classification: 5. Process of inquiry
Sub-Classification: 6. Observing

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.

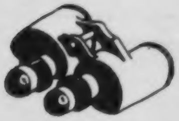
1972-73 Subobjective: D. Know inquiry skills.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

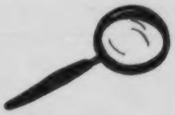
Overlap:		9	13
1976-77 Package-Exercise:		02-09	05-28
National P-value:			
R104014	03	66.76	93.23
Exercise Total Time (seconds)		53	57

9. A girl wants to look at some very small living things in a drop of water. She knows that they are there but can't see them.

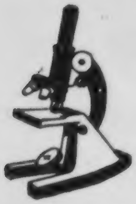
Which one of the pictures below shows the BEST object she can use to see these living things?



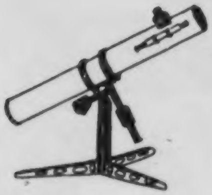
○ Binoculars



○ Magnifying Glass



● Microscope



○ Telescope

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

S-104014-428-1,2

Release #: R105011

NAEP #: 105011-24

Content Classification: 5. Process of inquiry
Sub-Classification: 2. Assumptions

1972-73 Objective: I. KNOW THE FUNDAMENTAL ASPECTS OF SCIENCE.
1972-73 Subobjective: E. Know the scientific enterprise.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	Adult
1976-77 Package-Exercise:	08-34	02-08
National P-value:		
R105011 05	32.39	
Exercise Total Time (seconds)	45	*

* No paced tape was used in this administration of this exercise.

34. Which of the following areas of science has been completely investigated and is thoroughly understood?

○ Weather

○ Gravity

○ Heredity

○ Electricity

● None of the above

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

R-105011-138-2

Release #: R201015

NAEP #: 201015-23

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	07-31	11-28
National P-value:		
R201015 04	34.18	61.98
Exercise Total Time (seconds)	65	65

28. The water that flows into the ocean as rivers

○ all comes from lakes at the heads of the rivers.

○ all comes from town and city sewage disposal plants.

○ was lifted from underground caverns to the surface of the earth by gravity.

● reaches the river by many paths through the air, over the land surface, or underground.

○ I don't know.

R201015 428 2 3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201021

NAEP #: 201021-1234

Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

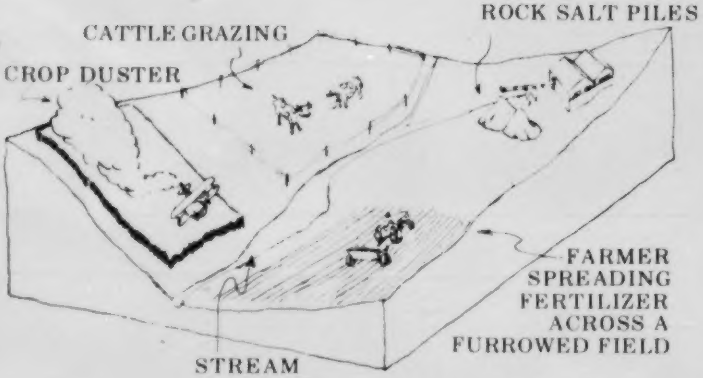
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13	17	Adult
1976-77 Package-Exercise:	05-22	04-28	03-07	02-09
National P-value:				
R201021 02	5.19	27.64	50.93	
Exercise Total Time (seconds)	60	61	59	*

* No paced tape was used in this administration of this exercise.


CATTLE GRAZING
ROCK SALT PILES
CROP DUSTER
FARMER SPREADING FERTILIZER ACROSS A FURROWED FIELD
STREAM

The crop duster, cattle, salt stored in piles outdoors, and farmer spreading fertilizer CAN ALL

○ improve the soil.

● make the stream water impure.

○ kill insects that attack crops.

○ make plants grow bigger and faster.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201052

NAEP #: 201052-234

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17	Adult
1976-77 Package-Exercise:	06-31	04-35	02-12
National P-value:			
R201052 01	28.10	34.34	
Exercise Total Time (seconds)	44	45	*

* No paced tape was used in this administration of this exercise.

31. You are looking to the west and observe a full moon near the horizon. What time is it?

● It is about sunrise.
○ It is about noon.
○ It is about sunset.
○ It is about midnight.

○ I don't know.

R-201052-428-2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R201056

NAEP #: 201056-1

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 9
1976-77 Package-Exercise: 02-05

National P-value:
R201056 01 57.66

Exercise Total Time (seconds) 61

5. Which of the following will speed up the burning of a campfire?

● Blow on the fire.
○ Cover the fire with sand.
○ Sprinkle dirt on the fire.
○ Sprinkle water on the fire.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R201057

NAEP #: 201057-1

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 06-32

National P-value:
R201057 04 11.40

Exercise Total Time (seconds) 63

32 A red ball weighs more than a blue ball. This means that

○ the red ball is larger than the blue ball.
○ the red ball can be made to move faster than the blue ball.
○ in direct sunlight the red ball is shinier than the blue ball.
● the Earth's pull on the red ball is greater than on the blue ball.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201058

NAEP #: 201058-1

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 03-06

National P-value:
R201058 02 43.04

Exercise Total Time (seconds) 60

6. Why are the rocks and pebbles found in river beds usually smooth?

- ○ The rocks are very old.
- ● The rocks rubbed against other rocks.
- ○ Rivers only flow where rocks are smooth.
- ○ Animals in the river keep rubbing against the rocks.

- ○ I don't know.

R-201058-13A-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201060

NAEP #: 201060-1

Content Classification: 2. Physical science
Sub-Classification: 4. Waves
Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

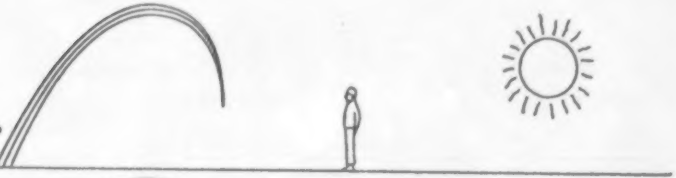
Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

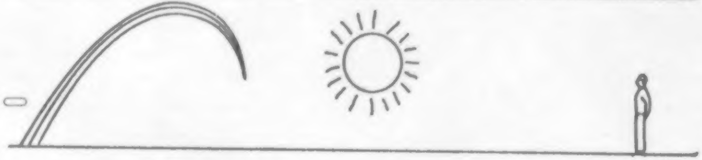
Overlap: 9
1976-77 Package-Exercise: 03-12

National P-value:
R201060 01 19.12

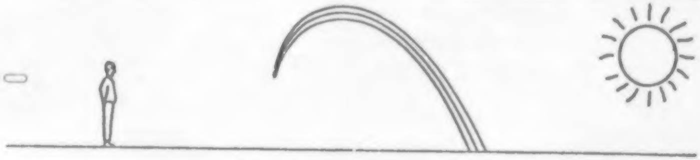
Exercise Total Time (seconds) 59

12. Which of these pictures shows where the rainbow and the Sun must be for the boy to see the rainbow?

●


○


○

○


○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-201060-138-1

Release #: R201062

NAEP #: 201062-1

Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 05-25

National P-value:
R201062 02 35.52

Exercise Total Time (seconds) 60

25. How do dewdrops form on a leaf?

○ They are formed from melted frost.
● They are formed on the leaf from water in the air.
○ They fall as melted snow and are caught on the leaf.
○ They fall like a light rain and are caught on the leaf.

○ I don't know.

R-201062-1-38-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201067

NAEP #: 201067-123

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1969-70

Overlap:	9	13	17
1976-77 Package-Exercise:	04-23	04-24	04-24
National P-value:			
R201067 03	5.45	41.43	67.19
Exercise Total Time (seconds)	65	53	43

Note: Assessed only at age 9 in 1969-70 & 1972-73.

23. A pint of water at a temperature of 50° Fahrenheit is mixed with a pint of water at 70° Fahrenheit. The temperature of the water just after mixing will be about

○ 20° F.
○ 50° F.
● 60° F.
○ 70° F.
○ 120° F.

○ I don't know.

R-201067-118-1,2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201071

NAEP #: 201071-2

Content Classification: 1. Biology
Sub-Classification: 3. Energy transformation
Sub-Classification: 7. Ecology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 05-32

National P-value:
R201071 02 39.74

Exercise Total Time (seconds) 48

32. If all green plants died, what would be the most important effect on man?

○ He would have to eat meat only.

● Sooner or later man would die of starvation.

○ Man would get a little sick because he couldn't get vitamins.

○ Man couldn't build houses because there would be no lumber.

○ The land would be bare and not very pretty for man to look at.

○ I don't know.

R-201071-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R201073

NAEP #: 201073-234

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap:	13	17	Adult
1976-77 Package-Exercise:	10-07	07-32	02-14
National P-value:			
R201073 02	19.77	29.07	
Exercise Total Time (seconds)	43	45	*

* No paced tape was used in this administration of this exercise.

7. **Suppose that a rubber balloon filled with air does not leak and that it is taken from Earth to the Moon. One can be sure that on the Moon, the balloon will have the same**

○ size as on Earth.

● mass as on Earth.

○ weight as on Earth.

○ rate of fall as on Earth.

○ ability to float as on Earth.

○ I don't know.

○
○
○
○
○
○
○
○
○
○

R-201073-138-2-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201074

NAEP #: 201074-234

Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:		13	17	Adult
1976-77 Package-Exercise:		09-03	09-06	02-15
National P-value:				
R201074	05	26.95	42.25	
Exercise Total Time (seconds)		63	61	*

* No paced tape was used in this administration of this exercise.

3. The statement that the relative humidity is 50 percent means that

○ the chance of rain is 50 percent.

○ the atmosphere contains 50 pounds of water per cubic mile.

○ the atmosphere contains 50 grams of water per cubic meter.

○ the atmosphere would be saturated with water if the air temperature were 50° F.

● the atmosphere contains half as much water as it could contain at its present temperature.

○ I don't know.

R-201074-1-38-2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R201077

NAEP #: 201077-3

Content Classification: 2. Physical science
Sub-Classification: 5. Electricity and magnetism

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	17
1976-77 Package-Exercise:	04-34
National P-value:	
R201077 02	33.93
Exercise Total Time (seconds)	48

34. A metal plate is uncharged. If the plate gains electrons, the plate will

○ be neutral.

● be negatively charged.

○ be positively charged.

○ be charged, but one cannot tell how.

○ alternate between being positively and negatively charged.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-201077-138-3

Release #: R201079

NAEP #: 201079-34

Content Classification: 2. Physical science
Sub-Classification: 4. Waves

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

	17	Adult
Overlap: 1976-77 Package-Exercise:	02-31	02-17
National P-value: R201079 03	62.62	
Exercise Total Time (seconds)	46	*

* No paced tape was used in this administration of this exercise.

31. In hot climates, the advantage of buildings with white surfaces is that white surfaces effectively

○ absorb light.

○ diffract light.

● reflect light.

○ refract light.

○ transmit light.

○ I don't know.

0-201079-130-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R201082

NAEP #: 201082-3

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 17
1976-77 Package-Exercise: 05-07

National P-value:
R201082 02 38.12

Exercise Total Time (seconds) 32

On which one of the following temperature scales is a one-degree temperature change a smaller change than on the others?

○ Centigrade
● Fahrenheit
○ Kelvin

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

R-201082-428-1

Release #: R201086

NAEP #: 201086-2

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

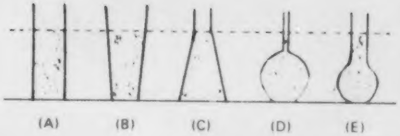
Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 08-32

National P-value:
R201086 04 49.37

Exercise Total Time (seconds) 46

32.



A quart of water at room temperature (70° Fahrenheit) is poured into each of the five containers as shown above. When the water in all five is heated to 150° Fahrenheit, the water level will be highest in container

○ A.
○ B.
○ C.
● D.
○ E.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R201114

NAEP #: 201114-2

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: A. Understand and apply facts and simple concepts.

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 01-11

National P-value:
R201114 03 9.38

Exercise Total Time (seconds) 69

11. Joe is taking a bath. He puts in half hot water (160°F) and half cool water (60°F). What will be the temperature of the water in the bath?

○ 60°F
○ 100°F
● 110°F
○ 160°F
○ 220°F

○ I don't know.

R201114-428-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R202029

NAEP #: 202029-123

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

		9	13	17
Overlap:				
1976-77 Package-Exercise:		06-24	04-34	02-36
National P-value:				
R202029A	03	14.50	25.79	36.60
Exercise Total Time (seconds)		69	91	92

Note: Individually administered at age 9 in 1972-73. Part B elicited responses too vague to score meaningfully.

24. A. Bill took a glass of water and weighed it. He put the glass of water in a freezer until the water froze.

Which one of these sentences tells what he would find if he weighed it again after it froze?

○ The glass of ice would weigh more than the glass of water.

○ The glass of ice would weigh less than the glass of water.

● The glass of ice would weigh the same as the glass of water.

○ I don't know.

B. Explain in a few words why you chose the answer you did.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

```
Release #:          R202031

NAEP #:             202031-123

Content Classification:     2. Physical science
    Sub-Classification:     3. Mechanics

1972-73 Objective:         II. UNDERSTAND  AND  APPLY  THE FUNDAMENTAL
                               ASPECTS OF SCIENCE IN A WIDE  RANGE  OF
                               PROBLEM SITUATIONS.
1972-73 Subobjective:       B. Understand and apply laws (principles).

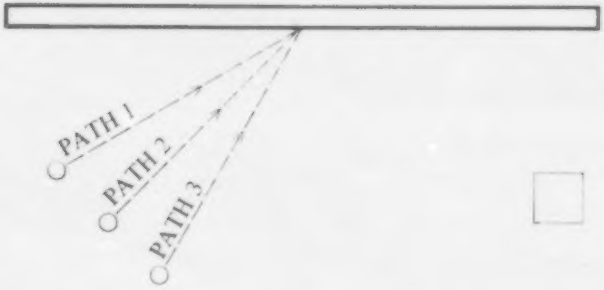
Taxonomic Level:        Application
Assessed In:            1972-73,1976-77
Release Status:         Released after 1976-77

Overlap:                          9        13        17
1976-77 Package-Exercise:       05-33     07-34     10-07

National P-value:
    R202031       01            22.68     44.79     52.83

Exercise Total Time (seconds)     59        59        57
```

33.



Suppose you tried to bounce a ball off a wall to hit a wooden block. Along which path should you roll the ball?

- ● Path 1
- ○ Path 2
- ○ Path 3
- ○ If you rolled the ball along any of the paths the block would be hit.

- ○ I don't know.

R-202031-47• 1 2 3

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R202037

NAEP #: 202037-3

Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

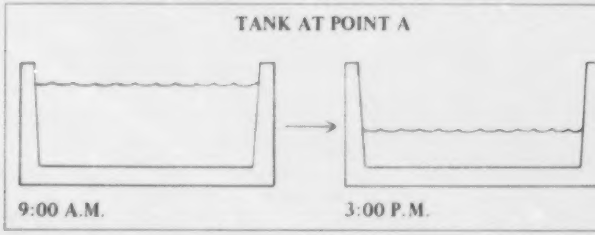
Taxonomic Level: Application
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

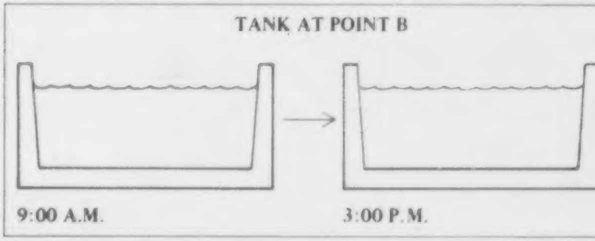
Overlap: 17
1976-77 Package-Exercise: 02-35

National P-value:
R202037 02 59.86

Exercise Total Time (seconds) 70

35.





Two identical tanks of water were put outdoors in the hot sun at differen
places (Point A and Point B). Both were filled to the same level and the a
temperature at both places was in the high 80's all day. Drawings show th
water levels in each at 9:00 a.m. and at 3:00 p.m. After the tanks were
filled in the morning, no water was added nor did anyone take out any wa
from the tanks during the day.

35. (Continued)

Which one of the following conclusions could you **PROBABLY** reach?

○ The relative humidity remained close to 100% all day at Point A.

● The relative humidity remained close to 100% all day at Point B.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R202048

NAEP #: 202048-1

Content Classification: 1. Biology
Sub-Classification: 4. Heredity

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMEN
ASPECTS OF SCIENCE IN A WIDE RANGE
PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principle

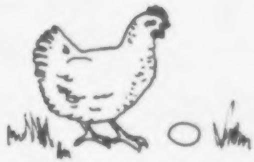
Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-03

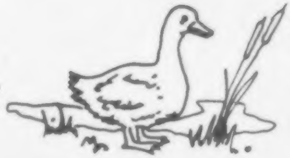
National P-value:
R202048 03 91.85

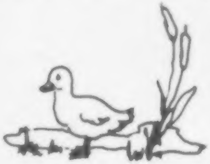
Exercise Total Time (seconds) 47

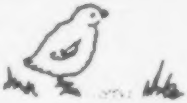
3. The animal below laid this egg.

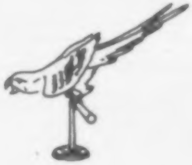


Which picture below shows the young animal that can come out of this egg?

○ 

○ 

● 

○ 

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R202050

NAEP #: 202050-3

Content Classification: 1. Biology
Sub-Classification: 4. Heredity

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 11-31

National P-value:		
R202050A	01	79.68
R202050B	02	4.91
R202050C	04	53.52

Exercise Total Time (seconds) 141

31. Some scientists traveling on the ocean came upon a small island that had not been explored before. They discovered a new kind of animal with colored fur. Since the island was isolated, they could count all of these animals. They discovered that there were exactly 100 of the colored animals and that 25 animals had green fur, while the remaining 75 had blue fur.

A. The scientists can best make which one of the following assumptions?

● Blue fur is dominant.
○ Green fur is dominant.
○ Blue fur is recessive.
○ Green fur and blue fur are codominant.

○ I don't know.

B. The GENE for the dominant trait will occur with a FREQUENCY of

○ .25
● .50
○ .75
○ 1.00

○ I don't know.

○
○
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○
○
○
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○
○

R-202050-428-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

31. (Continued)

C. Assume that no external factors interfere with the population for 100 years. What would you expect to find after 100 years?

○ The fur color of all animals is blue.
○ The fur color of all animals is green.
○ The fur color of each animal is a mixture of blue and green.
● The fur color among the animals is in the same proportion as found originally.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R202055

NAEP #: 202055-234

Content Classification: 3. Earth science
Sub-Classification: 1. Meterology

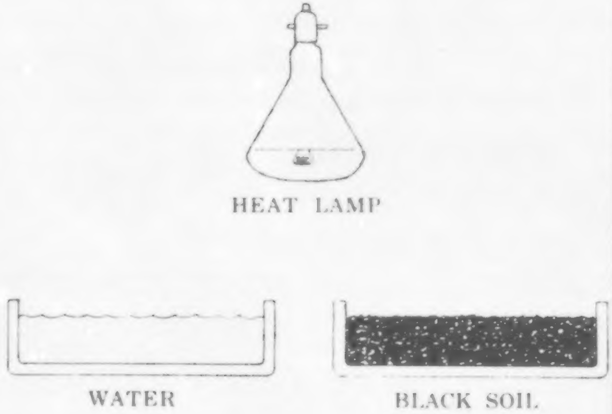
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

	13	17	Adult
Overlap: 1976-77 Package-Exercise:	06-33	08-06	02-16
National P-value: R202055 02	22.71	32.77	
Exercise Total Time (seconds)	108	108	*

* No paced tape was used in this administration of this exercise.

33.



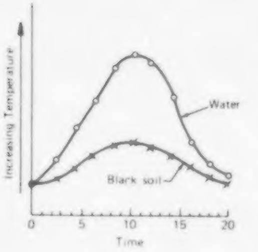
The picture shows a heat lamp shining on the two pans. Both the water and the black soil were at the same temperature before the heat lamp was turned on. During the experiment the temperatures of the water and the black soil were recorded every two minutes for a period of 20 minutes. During the 20 minutes the heat lamp was turned on for the first 10 minutes and turned off for the last 10 minutes.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

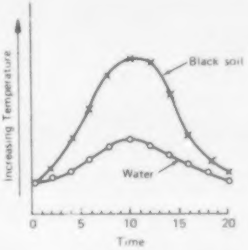
33. **(Continued)**

Which one of the following graphs BEST shows the temperature of the black soil and water during the experiment?

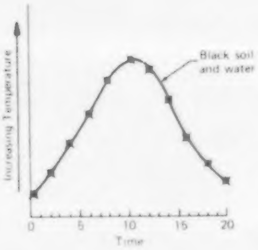
○



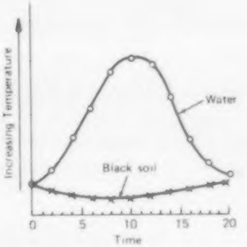
●



○



○



○ I don't know

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R202057

NAEP #: 202057-3

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

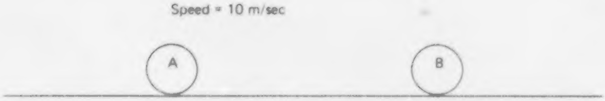
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Knowledge
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 08-05

National P-value:
R202057 01 30.06

Exercise Total Time (seconds) 70



Two steel balls of the same size and mass are on a level friction-free surface. At first, ball A is moving to the right at a speed of 10 meters per second and ball B is standing still. Ball A collides head-on with ball B.

Which one of the following describes the speed and direction of ball A after the head-on collision?

● **Ball A** is stopped.

○ **Ball A** is moving to the left at a speed of 10 meters per second.

○ **Ball A** is moving to the right at a speed of 10 meters per second.

○ **Ball A** is moving to the right, but its speed is slightly less than 10 metess per second.

○ **Ball A** is moving to the left, but its speed is slightly greater than 10 meters per second.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R202058

NAEP #: 202058-123

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

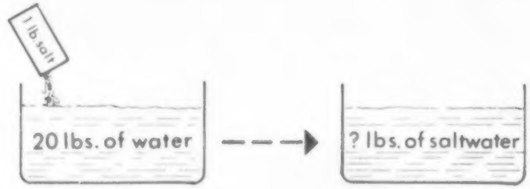
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

		9	13	17
Overlap: 1976-77 Package-Exercise:		07-10	04-35	08-04
National P-value: R202058	03	36.57	35.33	44.92
Exercise Total Time (seconds)		42	42	42

10.



One pound of salt is completely dissolved in twenty pounds of water. The resulting saltwater will weigh

○ nineteen pounds.
○ twenty pounds.
● twenty-one pounds.
○ The weight is unpredictable.

○ I don't know.

○
○
○
○
○
○
○
○
○
○

S-202058-428-1-2-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R202060

NAEP #: 202060-3

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise: 17 / 01-04

National P-value:
R202060 04 27.41

Exercise Total Time (seconds) 77

4. $2NO + O_2 \rightleftharpoons 2NO_2$

The closed chemical system shown by the equation above is in dynamic equilibrium at a certain temperature and pressure. This means that

- ○ all molecular activity has stopped.
- ○ all of the NO and O_2 have reacted to form NO_2.
- ○ the number of molecules of NO_2 is equal to the number of molecules of NO.
- ● the rate of the reaction from left to right is equal to the rate of the reaction from right to left.
- ○ the number of molecules of gases on the left in the equation is equal to the number of molecules on the right.

- ○ I don't know.

R-202060-428-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R202070

NAEP #: 202070-12

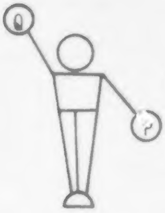
Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

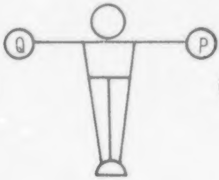
Taxonomic Level: Application
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	01-01	01-05
National P-value:		
R202070 02	87.83	62.97
Exercise Total Time (seconds)	72	73

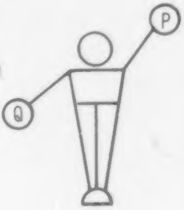
1. Suppose that you want to drop a penny and a quarter at exactly the same time and have them hit the floor at exactly the same time. Fill in the oval below the picture which shows BEST how you would hold the penny and the quarter just before you drop them.



○



●



○

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

8-202070-428-1,2

Release #: R202071

NAEP #: 202071-12

Content Classification: 5. Process of inquiry
Sub-Classification: 3. Communications

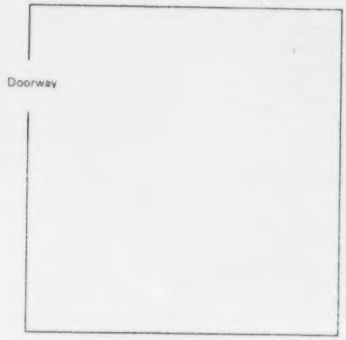
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: E. Understand and apply laws (principles).

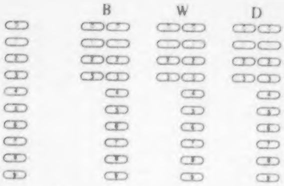
Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	9	13
1976-77 Package-Exercise:	07-08	08-36
National P-value:		
R20207101 03	23.86	68.14
Exercise Total Time (seconds)	105	91
Percent Scorer Agreement	96	97

Note: The national P-value is for all three objects correctly located and identified.

8. A girl enters a bedroom. The bed is along the wall to her left, the window is in the wall to her right, and the desk is along the wall in front of her. **DRAW AND LABEL** each of these objects in the diagram, which shows the room seen from above.





S-202071-428-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

SCORING GUIDE
202071-12

A girl enters a bedroom. The bed is along the wall to her left, the window is in the wall to her right, and the desk is along the wall in front of her. DRAW AND LABEL each of these objects in the diagram, which shows the room seen from above.

BED 00 = No response (entire page blank; all ovals = 00)

Acceptable

11 = Bed any place on Wall A

12 = Bed on Wall D to left of doorway

13 = Bed on Wall C to left of doorway

Unacceptable

20 = Other unacceptable

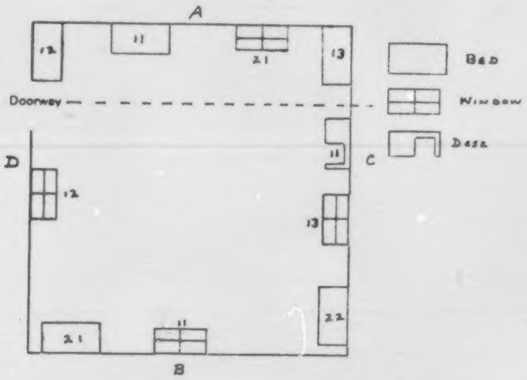
21 = Bed any place on Wall B

22 = Bed on Wall C to right of doorway

23 = Bed not present or indistinguishable (either window or desk must be present or distinguishable)

24 = Non-ratable (all responses MUST be 24)

39 = I don't know.



202071-12 cont'd

WINDOW 00 = No response (entire page blank; all ovals = 00)

Acceptable

11 = Window any place on Wall B

12 = Window on Wall D to right of doorway

13 = Window on Wall C to right of doorway

Unacceptable

20 = Other unacceptable

21 = Window any place on Wall A

23 = Window not present or indistinguishable (either bed or desk must be present and distinguishable)

24 = Non-ratable (all responses MUST be 24)

39 = I don't know.

DESK 00 = No response (entire page blank: all ovals = 00)

Acceptable

11 = Desk any place on Wall C

Unacceptable

20 = Other unacceptable

23 = Desk not present or indistinguishable (either window or bed must be present and distinguishable)

24 = Non-ratable (all responses MUST be 24)

39 = I don't know.

Release #: R202081

NAEP #: 202081-1

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: 2. Understand and apply laws (principles).

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

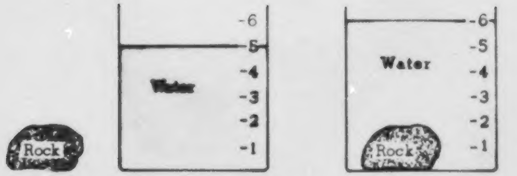
Overlap: 9
1976-77 Package-Exercise: 06-31

National P-value:
R202081 01 58.39

Exercise Total Time (seconds) 41

Note: In 1969-70 & 1972-73 age 9 time was 60 seconds.

31.



A rock is put into a pail that has some water in it. Before the rock is put into the pail, the water is at the 5-pint line. After the rock is added, the water rises to the 6-pint line. The space taken up by the rock is

● 1 pint.
○ 5 pints.
○ 6 pints.
○ 11 pints.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

○ T
○ S
○ F

8-202081-138-1

Release #: R202085

NAEP #: 202085-3

Content Classification: 1. Biology
Sub-Classification: 4. Heredity

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Application
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1972-73

Overlap: 17
1976-77 Package-Exercise: 04-31

National P-value:
R202085 04 35.99

Exercise Total Time (seconds) 76

31. In guinea pigs, fur color is dependent on only one pair of genes and black is dominant over white. If no mutations occur, what will happen if a purebred black guinea pig is crossed with a white guinea pig?

○ $\frac{1}{2}$ of the offspring will be black; $\frac{1}{2}$ will be white.

○ $\frac{3}{4}$ of the offspring will be black; $\frac{1}{4}$ will be white.

○ $\frac{9}{16}$ of the offspring will be black; $\frac{7}{16}$ will be white.

● All of the offspring will be black.

○ All of the offspring will be white.

○ I don't know.

R-202085-138-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R202086

NAEP #: 202086-3

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: F. Understand and apply laws (principles).

Taxonomic Level: Comprehension
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 07-33

National P-value:
R202086 05 20.67

Exercise Total Time (seconds) 46

17 Iron combines with oxygen to form rust. One should therefore find that rust weighs

○ the same as the iron it came from.
○ the same as the oxygen it came from.
○ less than the iron it came from.
○ less than the oxygen it came from.
● more than the iron it came from.

○ I don't know.

R-202086-138-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R202088

NAEP #: 202088-3

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

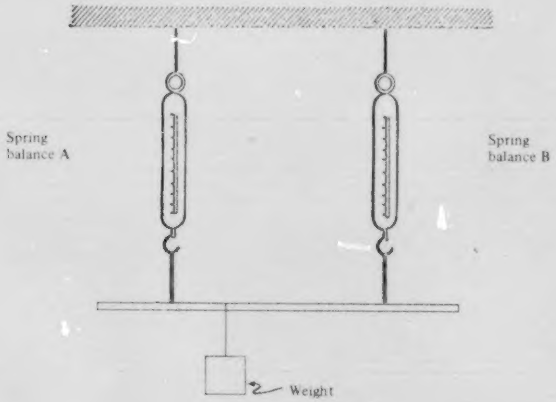
Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 17
1976-77 Package-Exercise: 04-33

National P-value:
R202088 01 73.08

Exercise Total Time (seconds) 61

33. Two identical spring balances are arranged as shown. Which spring balance will show the higher reading?



● A.

○ B.

○ Both spring balances will show the same reading.

○ One cannot predict which spring balance will show the higher reading.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

R-202088-138-3

Release #: R202095

NAEP #: 202095-2

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 09-07

National P-value:
R202095 04 63.00

Exercise Total Time (seconds) 77

7. Some air is pumped out of a can and the can collapses. Which of the following best explains why this happened?

○ Air molecules inside the can collapsed.
○ Pumping out the air molecules weakened the can.
○ The air molecules inside the can condensed to form water.
● The air pressure inside the can became less than the pressure outside the can.
○ Pumping the air out of the can increased the number of air molecules around the can.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R202106

NAEP #: 202106-12

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

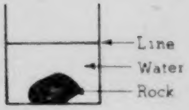
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: B. Understand and apply laws (principles).

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1969-70

Overlap:		9	13
1976-77 Package-Exercise:		01-07	01-09
National P-value:			
R202106	03	40.93	60.29
Exercise Total Time (seconds)		59	60

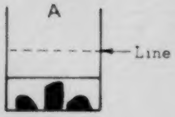
Note: Assessed only at age 9 in 1969-70.

7.

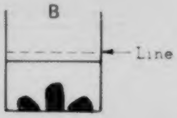


When a rock is put into a pail of water, the water comes up to the line as the picture above shows. If the rock is broken into three pieces, which of the following pictures shows how high the water is?

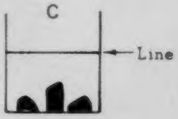
A



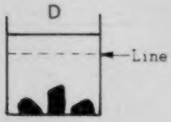
B



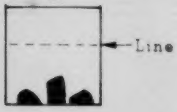
C



D



E



○ A

○ B

● C

○ D

○ E

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

R-202106-13B-1,2

Release #: R203018

NAEP #: 203018-3

Content Classification: 5. Process of inquiry
Sub-Classification: 6. Observing

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: C. Understand and apply conceptual schemes.

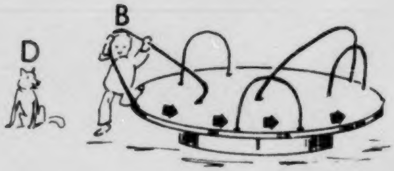
Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 03-04

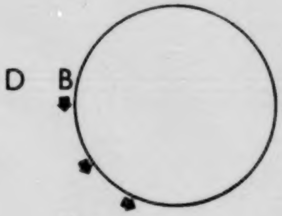
National P-value:
R203018 01 62.90

Exercise Total Time (seconds) 173
Percent Scorer Agreement 97

4.



A boy (B) rides on a merry-go-round. His dog (D) waits for him on the ground beside the merry-go-round. If we could see this from ABOVE, the boy's path would look like this:



4. (Continued)

Although the dog remains in one place, to the circling boy the dog seems to move. Imagine the path in which the dog seems to move **RELATIVE TO THE BOY** as the boy makes a complete circle.

In the space below, draw this apparent path of the dog as if you could se it from above.

D B

8-203018-428-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

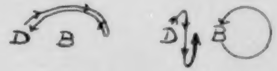
SCORING GUIDE
203018-3

Boy on a merry-go-round. Draw the path of the dog relative to the boy.

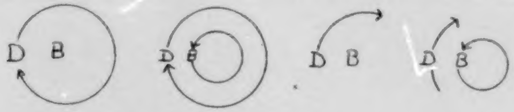
00 = No response

Acceptable

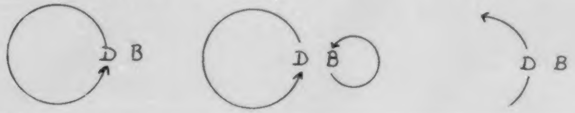
10 = Other acceptable



11 = Clockwise circle around the boy (or merry-go-round); Clockwise arc around the boy or merry-go-round

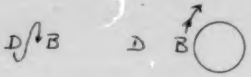


12 = Counter-clockwise circle that does not enclose the boy or merry-go-round; Counter-clockwise arc that would not enclose the boy or merry-go-round



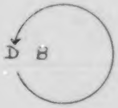
Unacceptable

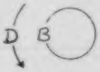
20 = Other unacceptable



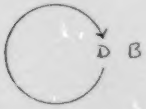
203018-3 Cont'd

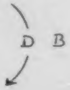
21 = Counter-clockwise circle around the boy or merry-go-round;
Counter-clockwise arc around the boy or merry-go-round (same as category 11 but wrong direction)





22 = Clockwise circle that does not include the boy or merry-go-round;
Clockwise arc that would not include the boy or merry-go-round (same as category 12 but wrong direction)





39 = I don't know.

Release #: R203020

NALP #: 203020-123

Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

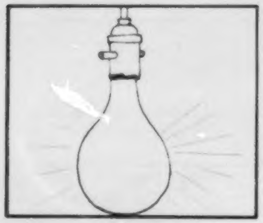
1972-73 Subobjective: C. Understand and apply conceptual schemes.

Taxonomic Level: Comprehension
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

		9	13	17
Overlap: 1976-77 Package-Exercise:		03-08	04-30	09-03
National P-value:				
R203020A	01	63.64	74.12	86.01
R203020B	01	51.91	49.53	68.76
R203020C	02	86.50	91.01	96.16
R203020D	01	76.11	82.01	88.62
R203020E	01	51.75	64.68	78.04
R203020F	01	77.61	69.32	78.59
Exercise Total Time (seconds)		145	137	128

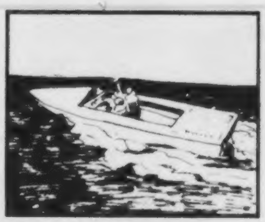
8. Do the illustrations on this and the following two pages show energy being changed (transformed) from one form to another?

A.



● Yes, shows energy change.
○ No, doesn't show energy change.
○ I don't know.

B.



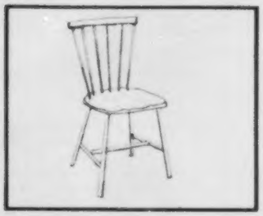
● Yes, shows energy change.
○ No, doesn't show energy change.
○ I don't know.

8-203020-428-1,2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

8. (Continued)

C.

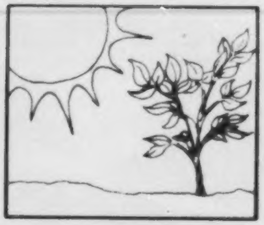


○ Yes, shows energy change.

● No, doesn't show energy change.

○ I don't know.

D.



● Yes, shows energy change.

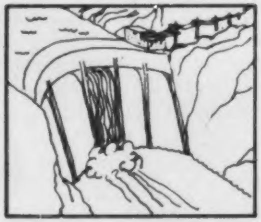
○ No, doesn't show energy change.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

8. (Continued)

E.

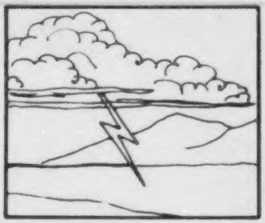


● Yes, shows energy change.

○ No, doesn't show energy change.

○ I don't know.

F.



● Yes, shows energy change.

○ No, doesn't show energy change.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204015

NAEP #: 204015-23

Content Classification: 5. Process of inquiry
Sub-Classification: 3. Communications

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: E. Understand and apply inquiry skills.

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	07-30	01-07
National P-value:		
R20401501 01	.58	6.23
Exercise Total Time (seconds)	180	180
Percent Scorer Agreement	96	97

Note: The national P-value is for a correctly drawn and labelled graph or histogram.

30. George counted the number of ants leaving an anthill. This was done for five minutes every hour beginning at 6:00 a.m. and ending at 12:05 p.m.

His findings were:

Time	Number of Ants Leaving the Hill
6:00 a.m. to 6:05 a.m.	2
7:00 a.m. to 7:05 a.m.	8
8:00 a.m. to 8:05 a.m.	16
9:00 a.m. to 9:05 a.m.	40
10:00 a.m. to 10:05 a.m.	54
11:00 a.m. to 11:05 a.m.	60
12:00 noon to 12:05 p.m.	58

Use the ruler you have been given to graph the data on the opposite page.

R-204015-428 2.3

SCORING GUIDE
204015-23

George counted the number of ants leaving an anthill. This was done for five minutes every hour beginning at 6:00 a.m. and ending at 12:05 p.m. Graph the data.

R: Ratability

0 = No response; NO FURTHER SCORING

1 = Ratable on at least one element and not a mirror image

2 = Non-ratable; attempt is not ratable on any of the 6 elements
NO FURTHER SCORING

-circles numbers on the graph
-recopies chart onto graph paper
-scribbles on stimulus page or graph
-word answer
-draws ants leaving the ant hill

3 = Mirror image:

When the graph is turned so that the ordinate is vertical, the lowest points on both axes intersect in the lower right hand corner of the graph; the graph then progresses from right to left.

9 = I don't know; NO FURTHER SCORING

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

PI: Proportionate Intervals

1 = Intervals are proportionate on both axes; each squ
of the graph represents the same number of units

-if bars are drawn they must all be the same width
-must have at least 3 points plotted or 3 labels
scale

2 = Intervals are proportionate on only one axis

-only one axis with scales labeled and intervals a
proportionate
-both axes with scales labeled, one is proportionat
the other isn't

4 = Unacceptable: Unit representation is distorted

5 = Trait not present (no attempt at scaling or graphin

CS: Ordinate Scaled (The ordinate is the axis on which t
dependent data (ants) is graphed)

1 = scaled completely and correctly

-scale labeled in equal progressions: 2, 4, 6 et
or 10, 20, 30, etc.
-scale must go to at least 60

2 = scaled incompletely (at least 3 labels on the scale)

-only labeled for the points 2, 8, 16, 40, 54, 58, 6
-scale not finished: 2, 4, 6; or 10, 20, 30
-scale labeled in unequal progressions: 5, 10, 20

4 = Unacceptable

-labels for independent data (time) on the ordinate
-less than 3 labels on scale

5 = trait not present: no labels on ordinate

Abscissa Scaled (The abscissa is the axis on which the independent data (time) is graphed)

1 = complete and correct (all 7 times must be labeled)

2 = incomplete but correct

-at least 3 labels on scale

4 = Unacceptable

-labels for dependent data on abscissa
-less than 3 labels on scale

5 = trait not present

-no label on abscissa

Titles

1 = 2 titles present

-dependent data titled: "ants", "number of ants" etc. AND
-independent data titled "time" or there is an indication that it is time by the labels on the scale, i.e. 6:00, 6 o'clock (the colon must be present to indicate that it is time. 600 To 605 is not enough to indicate a title)

2 = 1 title present (or 2 titles present but only one is correct)

4 = Unacceptable: incorrect title(s)

5 = titles not present

PP: Points Plotted or Bar Height

1 = all points plotted correctly or all bars drawn at correct height (tolerance of one square on ordinate scale per point plotted)

2 = incomplete but correct (3 to 6 points present)

-points which are present are correct (tolerance of 1 square per point plotted)

3 = only one point incorrect (off by more than 1 square); must have at least 3 points correct.

4 = Unacceptable

-less than 3 bars drawn
-less than 3 points plotted
-more than 1 point incorrect

5 = trait not present; no attempt at plotting points or drawing bars

PC: Points Connected or Bars Drawn

1 = all points which are present are connected; or all bars drawn

-at least 3 points plotted and connected
-at least 2 bars drawn

4 = Unacceptable

-points connected incorrectly
-some points connected but not all
-only 1 bar on graph
-draws a straight line

5 = No lines or bars present

-points only plotted; no attempt to connect any points
-only one point on graph
-no points present

Release #: R204038

NAEP #: 204038-123

Content Classification: 5. Process of inquiry
Sub-Classification: 8. Interpretation of data

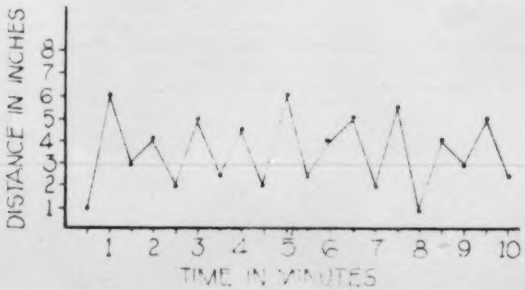
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

Overlap:	9	13	17
1976-77 Package-Exercise:	03-07	09-10	06-26
National P-value:			
R204038 02	37.97	33.74	35.71
Exercise Total Time (seconds)	72	7[illegible]	70

7. Each dot in the graph below shows the measurements made by a scientist while he watched a beetle's movements for ten minutes. Select the sentence that **BEST** tells what the graph shows.



○ The graph shows that the beetle was looking for food.

● The graph shows that the beetle's movements were not steady.

○ The graph shows that the beetle was trying to climb the wall.

○ The graph shows that the beetle changed direction every half minute.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R204061

NAEP #: 204061-123

Content Classification: 5. Process of inquiry
Sub-Classification: 4. Measurements

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:		9	13	17
1976-77 Package-Exercise:		03-05	09-09	09-05
National P-value:				
R204061	01	17.73	21.43	20.57
Exercise Total Time (seconds)		25	21	20
Percent Scorer Agreement		99	100	100

5. ______________________________

Estimate the length of the line above to the nearest centimeter.

ANSWER ______________ centimeters

S-204061-428-1-2-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

SCORING GUIDE
204061-123

Estimate the length of the line above to the nearest centimeter.

00 = No response

Acceptable

11 = 6 with or without centimeters (60 mm)
7 " " " " (70 mm)
8 " " " " (80 mm)

12 = Any other number from 6 - 8

Unacceptable

20 = Other unacceptable

21 = 6 inches
3

39 = I don't know.

Release #: R204064

NAEP #: 204064-1

Content Classification: 5. Process of inquiry
Sub-Classification: 5. Classification

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

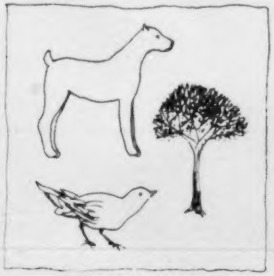
Overlap: 9
1976-77 Package-Exercise: 05-28

National P-value:

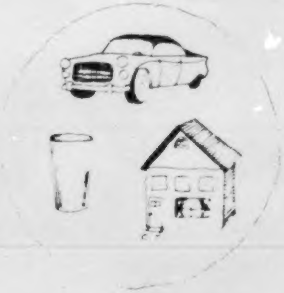
R204064A	01	86.38
R204064B	02	83.06
R204064C	02	70.04
R204064D	01	84.28
R204064E	01	82.10
R204064F	02	88.11
R204064G	02	84.58

Exercise Total Time (seconds) 141

28. Here are pictures of two groups of objects.



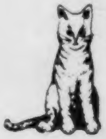
GROUP I



GROUP II

Look at each object in the pictures on this and the following page. If the object belongs to Group I, fill in the oval beside Group I. If the object belongs to Group II, fill in the oval beside Group II.

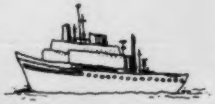
A.



● Group I
○ Group II

○ I don't know.

B.



○ Group I
● Group II

○ I don't know

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

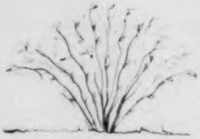
28. (Continued)

C.

○ Group I

● Group II

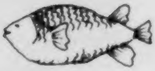
○ I don't know.

D. 

● Group I

○ Group II

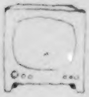
○ I don't know.

E. 

● Group I

○ Group II

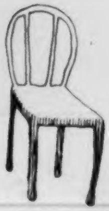
○ I don't know.

F. 

○ Group I

● Group II

○ I don't know.

G. 

○ Group I

● Group II

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R204070

NAEP #: 204070-3

Content Classification: 5. Process of inquiry
Sub-Classification: 7. Experimenting

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:
1976-77 Package-Exercise: 17 / 03-06

National P-value:
R204070 02 66.87

Exercise Total Time (seconds) 73

6. Suppose you want to determine whether it is cooler to wear a white shirt or a black shirt when walking in the sunlight during the summer. Which one of the following would serve as a suitable experiment to find facts that can be applied to the problem?

○ Secure several white guinea pigs and several black guinea pigs. Determine body temperatures for each animal when in the shade. Place the animals in a pen exposed to the sun and determine the body temperature of each animal every 10 minutes.

● Secure two thermometers, a piece of white cloth, and a piece of black cloth. Wrap the bulb of one thermometer with the white cloth and the bulb of the other thermometer with the black cloth. Place each wrapped thermometer in direct sunlight. Note the temperature of each thermometer.

○ Neither of the above experiments will be of use in solving this problem.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

R-204070-428-3

Release #: R204072

NAEP #: 204072-1

Content Classification: 3. Earth science
Sub-Classification: 2. Geology

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

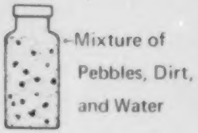
Taxonomic Level: Knowledge
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-11

National P-value:
R204072 03 70.04

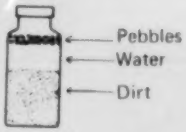
Exercise Total Time (seconds) 60

11. Arthur put water in a jar. Then he added spoonfuls of pebbles and dirt until the jar was nearly full. He covered the jar and shook it. It then looked like this:

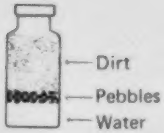

Mixture of
Pebbles, Dirt,
and Water

If he let the jar stand covered without shaking it for a week, the jar would look most like which of these pictures?

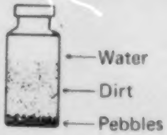
A


Pebbles
Water
Dirt

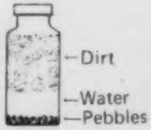
B


Dirt
Pebbles
Water

C


Water
Dirt
Pebbles

D


Dirt
Water
Pebbles

○ A

○ B

● C

○ D

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204079

NAEP #: 204079-1

Content Classification: 5. Process of inquiry
Sub-Classification: 3. Communications

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: C. Understand and apply inquiry skills.

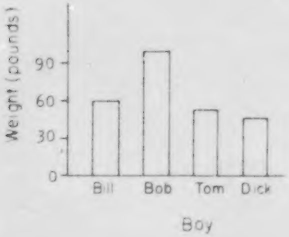
Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 02-02

National P-value:
R204079 03 85.30

Exercise Total Time (seconds) 60

2. This graph shows the weights of four boys.



How much does Bill weigh?

○ 30 pounds
○ 40 pounds
● 60 pounds
○ 90 pounds

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R204080

NAEP #: 204080-1

Content Classification: 5. Process of inquiry
Sub-Classification: 7. Experimenting

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Application
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1976-77

Overlap: 9
1976-77 Package-Exercise: 04-29

National P-value:
R204080 04 49.68

Exercise Total Time (seconds) 61

29. Which of the following is the best way to find out how strong a piece of string is?

○ Weigh the string.
○ Find out what the string is made of.
○ Take the string apart and soak the parts in water.
● Lift heavier and heavier weights with the string until it breaks.

○ I don't know.

R-204080-13A-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: P204088

NAEP #: 204088-1

Content Classification: 5. Process of inquiry
Sub-Classification: 3. Communications

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1969-70

Overlap: 9
1976-77 Package-Exercise: 06-26

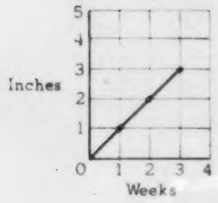
National P-value:
P204088 02 44.86

Exercise Total Time (seconds) 53

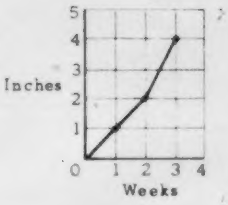
Note: In 1969-70 & 1972-73 age 9 time was 60 seconds.

26. A plant grows this way. The first week it is 1 inch high. The second week it is 2 inches high. The third week it is 4 inches high. Which of the following graphs shows this growth?

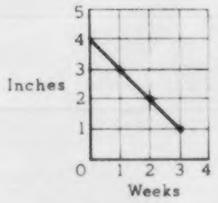
A



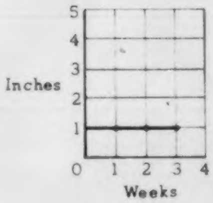
B



C



D



○ A
● B
○ C
○ D

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204092

NAEP #: 204092-2

Content Classification: 2. Physical science
Sub-Classification: 1. Matter

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

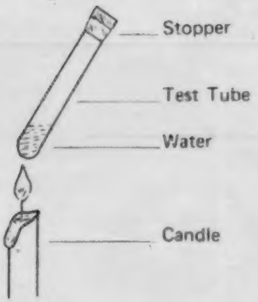
Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 06-23

National P-value:
R204092 02 52.38

Exercise Total Time (seconds) 78

23.



Water is heated as shown in the diagram above. If the stopper pops out, which of the following is most important in accounting for this?

- ○ The stopper gets hot and expands.
- ● Some of the water is changed to steam.
- ○ The air in the test tube absorbs heat.
- ○ The glass test tube gets very hot and starts to melt.
- ○ The glass test tube expands more than the stopper.

- ○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

S-204092-138-2

Release #: R204094

NAEP #: 204094-2

Content Classification: 5. Process of inquiry
Sub-Classification: 7. Experimenting

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 04-31

National P-value:
R204094 05 84.49

Exercise Total Time (seconds) 76

31. Joan planted beans in three flower pots. When all the plants were about an inch high she placed one pot in a dark closet, one in a window, and one under a light bulb which she kept on day and night. What was Joan probably trying to find out?

- ○ How high bean plants grow in the dark
- ○ If bean plants are as green as pea plants
- ○ How to get the most beans from bean plants
- ○ The effect of water and warmth on the growth of bean plants
- ● The effect of different amounts of light on the growth of bean plants

- ○ I don't know

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R204097

NAEP #: 204097-2

Content Classification: 5. Process of inquiry
Sub-Classification: 8. Interpretation of data

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Application
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 09-11

National P-value:
R204097 03 39.27

Exercise Total Time (seconds) 46

11. Of 929 plants, 705 had red flowers and 224 had white flowers. The ratio of red to white flowers is about

○ 700:1

○ 4:1

● 3:1

○ 2:1

○ 1:480

○ I don't know.

○
○
○
○
○
○
○
○
○
○

R-204097-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204098

NAEP #: 204098-2

Content Classification: 5. Process of inquiry
Sub-Classification: 3. Communications

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: E. Understand and apply inquiry skills.

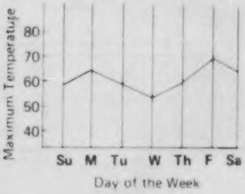
Taxonomic Level: Comprehension
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 05-35

National P-value:
R204098 04 90.21

Exercise Total Time (seconds) 32

35.



According to the graph above, the highest temperature was recorded on

○ Sunday.
○ Monday.
○ Wednesday.
● Friday.
○ Saturday.

○ I don't know.

○
○
○
○
○
○
○
○
○
○

R-204098-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204100

NAEP #: 204100-2

Content Classification: 5. Process of inquiry
Sub-Classification: 7. Experimenting

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Comprehension
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 Package-Exercise: 03-10

National P-value:
R204100 03 60.95

Exercise Total Time (seconds) 46

10. To determine the average height of 13-year-olds, it would be most important to have a large number of

- ○ scales.
- ○ yardsticks.
- ● 13-year-olds.
- ○ people doing the measuring.
- ○ observers of each measurement.

- ○ I don't know.

S-204100-138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204102

NAEP #: 204102-3

Content Classification: 5. Process of inquiry
Sub-Classification: 1. Models

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level:	Application
Assessed In:	1969-70, 1972-73, 1976-77
Release Status:	Released after 1972-73
Overlap:	17
1976-77 Package-Exercise:	11-30
National P-value:	
R204102 01	43.76
Exercise Total Time (seconds)	91

30. Which of the following is a model rather than an observation?

● The center of the Earth is liquid.

○ A ship can start from a point, sail around the Earth, and return to the same point.

○ The temperature at the bottom of a very deep well is higher than the temperature at the surface.

○ The average temperature of the South Pole is lower than the average temperature at the Tropic of Capricorn.

○ The top of the sail is the last portion of a ship that can be seen from the shore as the ship sails away from the shore.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R204103

NAEP #: 204103-3

Content Classification: 5. Process of inquiry
Sub-Classification: 1. Models

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: E. Understand and apply inquiry skills.

Taxonomic Level: Application
Assessed In: 1969-70,1972-73,1976-77
Release Status: Released after 1972-73

Overlap: 17
1976-77 Package-Exercise: 10-08

National P-value:
R204103 05 64.44

Exercise Total Time (seconds) 59

8. Four of the following are statements of fact. Which statement is a hypothes

○ The boiling point of water is 100° C.
○ A gallon of water weighs about 8 pounds.
○ Hydrogen was first prepared by Cavendish in 1766.
○ The Empire State Building is more than 50 stories high.
● The rings of Saturn were formed from a moon that exploded.

○ I don't know.

R-204103-138-3

STOP DO NOT CONTINU
UNTIL TOLD TO DO SO

Release #: R204128

NAEP #: 204128-1

Content Classification: 5. Process of inquiry
Sub-Classification: 8. Interpretation of data

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: I. Understand and apply inquiry skills.

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1969-70

Overlap: 9
1976-77 Package-Exercise: 06-30

National P-value:
R204128 04 59.97

Exercise Total Time (seconds) 53

Note: In 1969-70 & 1972-73 age 9 time was 60 seconds.

30. A doctor kept records of breathing rates of people when they were resting. He made the chart below.

BREATHING RATES

Person	Breaths in a minute
Baby boys	38
7-yr.-old girls	25
7-yr.-old boys	25
10-yr.-old boys	20
Mothers	16

The chart suggests that

○ boys breathe faster than girls.
○ girls breathe faster than boys.
○ older people breathe faster than younger people.
● younger people breathe faster than older people.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R204137

NAEP #: 204137-12

Content Classification: 5. Process of inquiry
Sub-Classification: 7. Experimenting

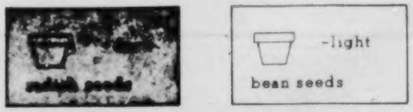
1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: D. Understand and apply inquiry skills.

Taxonomic Level: Application
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1969-70

		9	13
Overlap:			
1976-77 Package-Exercise:		01-08	01-10
National P-value:			
R204137	03	47.61	77.68
Exercise Total Time (seconds)		61	60

Note: Assessed only at age 9 in 1969-70.

8. Tom wanted to find out whether plants can grow better in the dark or in the light. He put a pot with 6 radish seeds in a dark room and a pot with 6 bean seeds on the window sill.



He added the same amount of water to both pots. The bean seeds grew better than the radish seeds, so Tom said his plants grow best in the light.

To be able to say this, he should have

○ watered both pots more.
○ watered the radish seeds more.
● put the same kind of seeds in both pots.
○ grown the seeds in water instead of soil.

○ I don't know.

8-204137-138-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R204140

NAEP #: 204140-1

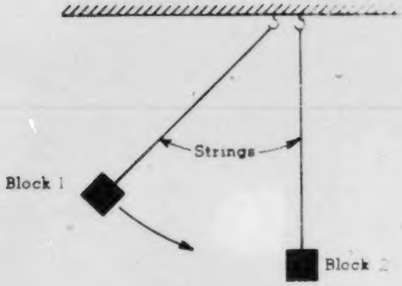
Content Classification: 2. Physical science
Sub-Classification: 3. Mechanics

Taxonomic Level: Knowledge
Assessed In: 1969-70, 1976-77
Release Status: Released after 1969-70

Overlap: 9
1976-77 Package-Exercise: 01-12

National P-value:
R204140 03 65.25

Exercise Total Time (seconds) 50



When Block 1 swings down and hits Block 2, which of the following will most likely happen?

○ Block 2 will not move at all.
○ Block 2 will swing off to the left.
● Block 2 will swing off to the right.
○ The string holding Block 2 will break.

○ I don't know.

R-204140-128-1

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R205010

NAEP #: 205010-23

Content Classification: 8. Science and technology
Sub-Classification: 2. Physical

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: E. Understand and apply the scientific enterprise.

Taxonomic Level: Comprehension
Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	08-28	05-03
National P-value:		
R205010 02	45.29	54.05
Exercise Total Time (seconds)	36	34

28. Thomas Edison tried dozens of materials to find the best one for a filament in his new incandescent electric light bulb. Is this science or technology?

○ Science

● Technology

○ I don't know.

8-205010-438-2,3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R205020

NAEP #: 205020-2

Content Classification: 5. Process of inquiry
Sub-Classification: 2. Assumptions

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.

1972-73 Subobjective: E. Understand and apply the scientific enterprise.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 04-33

National P-value:
R205020 01 82.29

Exercise Total Time (seconds) 61

33. Which of the following statements about scientists is true?

● Scientists study many things.

○ A scientist studies only one topic during any year.

○ A scientist never does the same experiment more than once.

○ Once a scientist has measured something, he is satisfied that he is correct.

○ A scientist can claim a topic for research and other scientists then stay away from that topic.

○ I don't know.

R-205020 1 58 2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R205023

NAEP #: 205023-3

Content Classification: 5. Process of inquiry
Sub-Classification: 2. Assumptions

1972-73 Objective: II. UNDERSTAND AND APPLY THE FUNDAMENTAL ASPECTS OF SCIENCE IN A WIDE RANGE OF PROBLEM SITUATIONS.
1972-73 Subobjective: E. Understand and apply the scientific enterprise.

Taxonomic Level: Comprehension
Assessed In: 1969-70, 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 03-01

National P-value:
R205023 04 26.40

Exercise Total Time (seconds) 45

1. To begin work on a science problem, a scientist would NOT do which of the following?

○ Review pertinent literature.
○ Develop an experimental design.
○ Discuss the problem with others.
● List the conclusions to be proved.
○ Formulate a hypothesis to be tested.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R301009

NAEP #: 301009-2

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: A. Appreciate facts and simple concepts, laws (principles), and conceptual schemes.

Assessed In: 1972-73,1976-77
Release Status: Released after 1972-73

Overlap: 13
1976-77 **Package-Exercise:** 05-34

National P-value:

R301009A	01	18.86
R301009B	00	14.96
R301009B	10	3.39
R301009B	11	10.90
R301009B	12	1.93
R301009B	13	6.74
R301009B	14	30.17
R301009B	15	5.51
R301009B	16	2.93
R301009B	17	12.30
R301009B	18	2.49
R301009B	19	.74
R301009B	20	5.11
R301009B	39	2.85

Exercise Total Time (seconds) 114
Percent Scorer Agreement 97

34. A. Do you find science topics interesting?

● Often
○ Sometimes
○ Never

B. If so, what kind of topics?

____
____
____
____
____

R-301009 138-2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R302007

NAEP #: 302007-3

Content Classification: 7. Science and self
Content Classification: 9. Decision making

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.
1972-73 Subobjective: B. Appreciate inquiry skills.

Taxonomic Level: Analysis, synthesis, and evaluation
Assessed In: 1972-73,1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 06-29

National P-value:

R30200701	00	6.05
R30200702	01	35.82
R30200703	01	59.28
R30200704	01	11.56
R30200705	01	27.00
R30200706	01	53.31
R30200707	01	28.25
R30200708	01	16.82
R30200709	01	9.50
R30200710	01	64.52
R30200711	01	2.63

Exercise Total Time (seconds) 311
Percent Scorer Agreement 97

Note: The first P-value is the national percentage not responding to the exercise. Each remaining P-value is the national percentage of respondents giving at least one response in the corresponding scoring category. P-values are listed in the same order as the scoring categories.

29. You are going to hear a commercial two times. After listening to the commercial, write five questions you would like to have answered before you would logically pass judgment on the effectiveness of the product.

(1) ____________________

(2) ____________________

(3) ____________________

(4) ____________________

(5) ____________________

Text of the commercial:

"Do you want to make your teeth whiter? You can make your teeth whiter. Brush with Shine-On Toothpaste because Shine-On is a wonder product of the space age. A recent study shows that Shine-On will make your teeth whiter. A nationally famous research organization conducted a study exclusively for the manufacturers of Shine-On Toothpaste. Their published reports **show** that those who brushed with Shine-On for one month had teeth that were 27% whiter. Yes, that's right. Shine-On Toothpaste made their teeth 27% whiter **within one month**. Imagine, 27% whiter in only one month. You can make your teeth whiter. Brush often with Shine-On Toothpaste. Start today to make your teeth 27% whiter in one month. Use Shine-On Toothpaste -- a space age wonder."

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

	(1)	(2)	(3)	(4)	(5)
○	○ ○	○ ○	○ ○	○ ○	○ ○
○	○ ○	○ ○	○ ○	○ ○	○ ○
○	○ ○	○ ○	○ ○	○ ○	○ ○
○	○ ○	○ ○	○ ○	○ ○	○ ○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○
○	○	○	○	○	○

R302007-428-1

SCORING GUIDE
302007-3

Toothpaste commercial. After listening to the commercial, write five questions you would like to have answered before you would logically pass judgment on the effectiveness of the product.

00 = No response

Acceptable

10 = Other acceptable

If not happy could money be given back
Why does it take so long to make your teeth brite
Why should I want my teeth, specifically, 27% white
What are the reasons for the better results

11 = The study and/or its validity

How could you tell they are 27% whiter
How many people were in the study
What was the age group tested
Who gave the tests

12 = Application or use of product

How much do you have to brush
Is it for all ages

13 = Safety of the product

Does it have any harsh chemicals in it
Does it wear down the enamel

14 = Content of the product.

What is it that makes them shine
What makes it work

15 = Other benefits

Is it a breath pleasure
Do it help cavity
What does it do for ones gums
Does it clean your teeth

302007-3 Cont'd

16 = Endorsement by authorities

What do dentists say about it
Is it approved by the ADA

17 = General statement

How does it work

Unacceptable

20 = Other unacceptable

Why make such a product
Why advertise it as brighter
Is the tooth paste really good
Do it really do a good job on your teeth
What would the price be
Does it taste good
Is it worth it

39 = I don't know.

Release #: R303033

NAEP #: 303033-3

Content Classification: 9. Decision making
Content Classification: 6. Persistent societal problems
Sub-Classification: 2. Environment

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: C. Appreciate the scientific enterprise.

Taxonomic Level: Application
Assessed In: 1972-73, 1976-77
Release Status: Released after 1972-73

Overlap:
1976-77 Package-Exercise: 17 / 07-28

National P-value:
R303033 05 77.44

Exercise Total Time (seconds) 61

28. A coal-burning electric power plant is proposed in your area. The power plant will reduce the cost of electricity as well as prevent future power failures. It will also discharge heat into the environment and cause some air pollution. Which one of the following best describes YOUR reaction to the proposed construction of this power plant?

○ Build it. I can save money.

○ Build it. It will be good for my community.

○ Build it. I'll have all the electricity I need.

○ Don't build it since it will pollute the water and the air.

● Don't build it without first determining the effect on the environment.

○ I don't have any reaction.

8-303033-428-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R303042

NAEP #: 303042-3

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: C. Appreciate the scientific enterprise.

Assessed In: 1972-73, 1976-77

Release Status: Released after 1972-73

Overlap: 17

1976-77 Package-Exercise: 10-03

National P-value:

R303042A	01	73.07
R303042B	01	78.50
R303042C	01	73.20
R303042D	01	68.98
R303042E	01	53.53
R303042F	01	94.08
R303042G	01	77.94
R303042H	01	88.97
R303042I	01	76.58
R303042J	01	65.39

Exercise Total Time (seconds) 208

Note: The 1972-73 version of this exercise had an additional Part K.

3. Indicate whether you approve or disapprove of pure scientific research in each area described on this and the following two pages.

A. Modification of inherited traits in humans

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

B. Space exploration

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

C. Pesticides and herbicides

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

D. Atomic energy

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

R 303042-428.1

(Continued)

E. Production of life in the laboratory

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

F. Air and water pollution

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

G. Extraction of food from plants growing in the sea

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

H. Heart transplants

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

3. (Continued)

I. Population control

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

J. Origins of the universe

● Yes, I approve of such research.

○ No, I do not approve of such research.

○ I don't know.

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R303065

NAEP #: 303065-3

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: C. Appreciate the scientific enterprise.

Assessed In: 1972-73,1976-77

Release Status: Released after 1972-73

Overlap: 17

1976-77 Package-Exercise: 06-23

National P-value:

R303065A	02	75.85
R303065B	01	36.63
R303065C	01	67.51
R303065D	02	52.98

Exercise Total Time (seconds) 82

23. On this and the following page is a series of statements about the nature of science. For each statement, indicate whether you agree, whether you disagree, or whether you neither agree nor disagree with the statement.

A. Scientists believe that the universe will be completely understood in a few years.

○ Agree
● Disagree
○ Neither agree nor disagree

B. Science is a self-correcting enterprise.

● Agree
○ Disagree
○ Neither agree nor disagree

C. Scientific conclusions are statements that something is highly probable.

● Agree
○ Disagree
○ Neither agree nor disagree

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R-303065-42B-3

23. (Continued)

D. Laws in science are statements which are not subject to change.

○ Agree

● Disagree

○ Neither agree nor disagree

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R303070

NAEP #: 303070-3

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: C. Appreciate the scientific enterprise.

Assessed In: 1972-73,1976-77

Release Status: Released after 1972-73

Overlap: 17

1976-77 Package-Exercise: 03-09

National P-value:

R303070A	01	87.39
R303070B	02	80.99
R303070C	01	75.56
R303070D	01	62.98
R303070E	01	75.32
R303070F	02	69.26
R303070G	02	70.02

Exercise Total Time (seconds) 144

9. On this and the following two pages are statements about theories and their role in science. Read each statement and indicate whether you agree or disagree with the statement.

A. Theories are created in the minds of men.

● Agree
○ Disagree

○ I don't know.

B. Theories in science never go beyond the observed facts on which they are based.

○ Agree
● Disagree

○ I don't know.

C. The usefulness of a theory is in its application in explaining natural events.

● Agree
○ Disagree

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

R 303070-428 3

(Continued)

D. Theories are neither true nor false but are judged only in terms of whether they are useful in explaining natural events.

● Agree
○ Disagree

○ I don't know.

E. Theories exist in the forms of words, mechanical models, and mathematical models.

● Agree
○ Disagree

○ I don't know.

F. If research results demonstrate that a theory is inadequate, the theory should be thrown out immediately.

○ Agree
● Disagree

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

9. (Continued)

G. The more complicated the theory, the better satisfied the scientist will be with it.

○ Agree
● Disagree

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R303083

NAEP #: 303083-3

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: C. Appreciate the scientific enterprise.

Assessed In: 1972-73, 1976-77
Release Status: Released after 1976-77

Overlap: 17
1976-77 Package-Exercise: 04-27

National P-value:

R303083A	01	73.41
R303083B	01	65.30
R303083C	01	55.05

Exercise Total Time (seconds) 69

Charles Darwin published The Origin of Species in 1859. His thoughts on evolution, and the development of his ideas by others in the past one hundred years or so, have been extremely important.

A. Are you somewhat familiar with a theory of evolution?

● Yes
○ No

○ I don't know.

B. Do you believe a theory of evolution to be a useful tool of science?

● Yes
○ No

○ I don't know.

C. Do you believe a theory of evolution to be supported by evidence?

● Yes
○ No

○ I don't know.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R303088

NAEP #: 303088-1

1972-73 Objective: III. APPRECIATE THE KNOWLEDGE AND PROCESSES OF SCIENCE, THE CONSEQUENCES AND LIMITATIONS OF SCIENCE, AND THE PERSONAL AND SOCIAL RELEVANCE OF SCIENCE AND TECHNOLOGY IN OUR SOCIETY.

1972-73 Subobjective: C. Appreciate the scientific enterprise.

Assessed In: 1969-70, 1972-73, 1976-77

Release Status: Released after 1976-77

Overlap: 9

1976-77 Package-Exercise: 07-07

National P-value:
R303088 02 73.94

Exercise Total Time (seconds) 33

7 Do you think the way the stars looked when you were born controls what you will do when you grow up?

○ Yes

● No

○ I don't know

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R501001

NAEP #: 501001-12

Content Classification: 3. Earth science
Sub-Classification: 4. Astronomy

Taxonomic Level: Knowledge
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		9	13
1976-77 Package-Exercise:		05-20	04-37
National P-value:			
R501001	03	48.09	73.04
Exercise Total Time (seconds)		21	21

Source: Comber, L.C. and Keeves, J.P., *International Studies in Evaluation I: Science Education in Nineteen Countries*. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 330.

20. About how long would it take a rocket ship to reach the moon?

○ Two hours
○ Several hours
● A few days
○ A light-year
○ Several years

8-501001-418-1.2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R501002

NAEP #: 501002-12

Content Classification: 1. Biology
Sub-Classification: 9. Growth and development

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:		
1976-77 Package-Exercise:	9 02-13	13 01-12
National P-value:		
R501002 04	47.61	55.71
Exercise Total Time (seconds)	32	33

Source: Comber, L.C. and Keeves, J.P., *International Studies in Evaluation I: Science Education in Nineteen Countries*. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 331.

13. Which of the following statements is true about seeds?

- ○ All plants produce seeds.
- ○ All fruits contain a large number of seeds.
- ○ All seeds are good to eat.
- ● Every seed contains a young plant, stored food and a seed coat.
- ○ The food stored in seeds is always in the cotyledon.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

Release #: R501003

NAEP #: 501003-2

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap: 13
1976-77 Package-Exercise: 09-12

National P-value:
R501003 01 17.33

Exercise Total Time (seconds) 37

Source: Comber, L.C. and Keeves, J.P., _International Studies in Evaluation I: Science Education in Nineteen Countries_. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 336.

12. We can explain chemical changes in terms of the gain or loss or sharing of

● electrons furthest from the nucleus of the atom.

○ electrons closest to the nucleus of the atom.

○ electrons from the nucleus of the atom.

○ protons from the nucleus of the atom.

○ neutrons from the nucleus of the atom.

R 501003-11N-2

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO

Release #: R502001

NAEP #: 502001-12

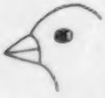
Content Classification: 1. Biology
Sub-Classification: 6. Evolution

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

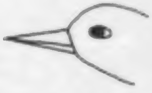
Overlap:	9	13
1976-77 Package-Exercise:	06-23	02-10
National P-value:		
R502001 02	50.39	66.84
Exercise Total Time (seconds)	22	22

Source: Comber, L.C. and Keeves, J.P., International Studies in Evaluation I: Science Education in Nineteen Countries. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 331.

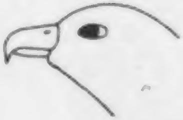
23. While Joe was sitting under a tree, he watched a bird getting insects from between the cracks of the bark. Which drawing shows the kind of beak this bird had?



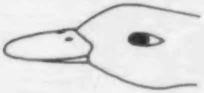
○ A



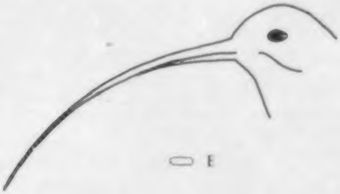
● B



○ C



○ D



○ E

B-502001-11S-1,2

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.

Release #: R502002

NAEP #: 502002-23

Content Classification: 2. Physical science
Sub-Classification: 2. Combinations

Taxonomic Level: Comprehension
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	08-39	09-10
National P-value:		
R502002 03	26.21	40.95
Exercise Total Time (seconds)	64	62

Source: Comber, L.C. and Keeves, J.P., *International Studies in Evaluation I: Science Education in Nineteen Countries*. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 352.

39. Flour is a fine powder obtained by grinding wheat or other cereal grains. A pile of grain burns only very slowly whereas flour dust suspended in air is explosive. Which of the following is the best explanation of this?

○ The heat produced when small particles burn is greater than the heat produced by the burning of large particles of the same substance.

○ Grinding the grain changes its chemical composition.

● For the same quantity of material small particles have a greater surface area in contact with air than large particles.

○ Small particles possess more energy than large particles.

○ The flour burns completely whereas the pile of grain does not.

R-502002-118-2,3

STOP DO NOT CONTINUE
UNTIL TOLD TO DO SO.

Release #: R502003

NAEP #: 502003-23

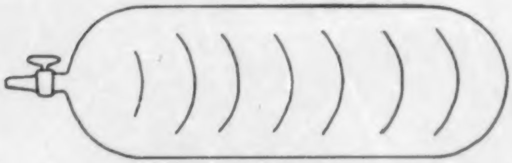
Content Classification: 2. Physical science
Sub-Classification: 1. Matter

Taxonomic Level: Application
Assessed In: 1976-77
Release Status: Released after 1976-77

Overlap:	13	17
1976-77 Package-Exercise:	07-35	07-35
National P-value:		
R502003 02	23.95	32.77
Exercise Total Time (seconds)	42	40

Source: Comber, L.C. and Keeves, J.P., International Studies in Evaluation I: Science Education in Nineteen Countries. Stockholm and New York: Almqvist and Wiksell and John Wiley and Sons, 1973, page 354.

35. An iron container is evacuated and weighed. Then it is filled with hydrogen gas and weighed again.



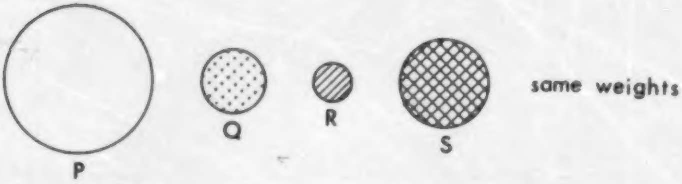
The weight of the container full of hydrogen compared to the weight of the evacuated container is

○ less.
● greater.
○ the same.
○ greater or less depending on the volume of the gas in the container.
○ greater or less depending on the temperature of the gas in the container.

R-502003-11B-2-3

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO

12. **Four balls, P, Q, R, and S shown to scale in the figures, are made of different materials, but have the same weight.**



Which one of the following statements about their densities is true?

- ○ They all have the same density.
- ○ You cannot know anything about their densities.
- ○ Which one has the highest density depends on how the volumes are measured.
- ○ P has the highest density.
- ● R has the highest density.

STOP DO NOT CONTINUE UNTIL TOLD TO DO SO.